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Fine Particle Emissions Information System User Guide

Midwest Research Inst, Kansas City, Mo

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16. ABSTRACT

The report is an extensive user guide to the Fine Particle Emissions Information System (FPEIS), a computerized database on primary fine particle emissions to the atmosphere from stationary sources, designed to assist engineers and scientists engaged in fine particle control technology development. The FPEIS will contain source test data including particle size distributions; chemical, physical, and bioassay testing results performed on particulate samples; design and typical operating data on particle control systems applied; process descriptions of the sources; and descriptions of the sampling equipment and techniques employed. The FPEIS, a successor to the MRI Fine Particle Inventory developed in 1971, gives detailed instructions for encoding FPEIS datasets, along with a copy of the FPEIS data input form. It discusses procedures which will provide users with access to the FPEIS either by direct computer request for authorized National Computer Center (NCC) accounts or by written request to the EPA project officer. It gives a list of standard data inquiry and retrieval requests, with instructions for their use. The appendix describes EPA's NCC and the generalized database management system used to implement the FPEIS.

17. KEY WORDS AND DOCUMENT ANALYSIS

a. DESCRIPTORS		b. IDENTIFIERS/OPEN ENDED TERMS	c. COSATI Field/Group	
Air Pollution	Environmental Biology	Air Pollution Control	13B	
Instructions		Stationary Sources		06F
Dust		User Guide	11G	
Data Storage		Fine Particle Emissions Information System	09B,05B	
Sampling			14B	
Size Determination		FPEIS		
		Fine Particulate		

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by

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PREFACE

This document was prepared for EPA/IERL-RTP under Contract No. 68-02-1324, Task No. 47. The task officer was Mr. Gary L. Johnson.

The work was performed in the Environmental and Materials Sciences Division of Midwest Research Institute. Dr. L. J. Shannon served as project manager and Mr. M. P. Schrag, Head, Environmental Systems Section, was the project leader.

This document was written by Mr. Schrag and Dr. A. K. Rao with assistance from Mr. G. S. McMahon of MRI Systems, Inc., and the task officer.

Approved for:

MIDWEST RESEARCH INSTITUTE

L. J. Shannon

L. J. Shannon, Director
Environmental and Materials
Sciences Division

December 23, 1976

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1.0 Introduction

The Fine Particle Emissions Information System (FPEIS) is a computerized information system containing information on primary fine particle emissions to the atmosphere from stationary point sources and evaluations of control devices. The purpose of the system is to provide a centralized source of fine particle measurement information and data for use by engineers and scientists engaged in fine particle control technology development.

next pg

Contents of the FPEIS include source test data with particle size distributions; chemical, physical, and bioassay testing results from analyses of particulate samples; and design and performance data on any particle control system applied. Also included are process descriptions of the sources, and descriptions of the sampling equipment and techniques employed. These data and information items are classified and arranged so as to ensure some compatibility with other EPA data bases, i.e., NEDS (the Source Classification Codes)[1] and the SAROAD/SOTDAT chemical identification systems.[2]

A uniform protocol for units and terminology has been developed along with standard input forms and definition of each data element for the system. The FPEIS uses metric units exclusively, although, for clarity, complete adherence to International System of Units (SI) protocol is not maintained. A list of metric-to-English conversion factors is given in Table 1.0-1. These standards and definitions will allow all data in the system to be stored and retrieved on a common basis.

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[1] "Guide for Compiling a Comprehensive Emission Inventory," EPA No. APTD-1135, NTIS No. PB 212-231, March 1973.

[2] "SOTDAT Final Report," EPA No. 450/3-75-070, July 1975.

The FPEIS has been implemented at the EPA National Computer Center (NCC) at Research Triangle Park, on the UNIVAC 1110 computer using SYSTEM 2000, a flexible data base management system. SYSTEM 2000, developed by MRI Systems, Inc., of Austin, Texas (no relation to Midwest Research Institute), will provide users with a virtually unlimited potential for data analysis. Features of SYSTEM 2000 include sorting, comparing, and retrieving information from the FPEIS in a variety of arrangements.

This document constitutes an extensive User Guide to the FPEIS. Detailed instructions for encoding FPEIS data sets are presented, along with a copy of the Standard FPEIS data input forms. Both Off-line and On-line Request procedures for users are explained for direct computer request (for authorized National Computer Center accounts) or for written request to the EPA project officer. A catalog of pre-defined user request commands is presented with instructions for its use. The Appendix includes descriptions of the EPA National Computer Center, the generalized data base management system used to implement the FPEIS, examples of input and output formats, and lists of the structure and key data elements in the data base.

This User Guide is designed with discrete segments for major sections and subsections. As modifications or additions to the system are made, this User Guide will be updated as appropriate.

A companion FPEIS Reference Manual[3] has been prepared which provides a general discussion of the FPEIS. It is suggested that users of the FPEIS read the Reference Manual prior to this document.

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[3] FPEIS Reference Manual, EPA-650/2-76-173, June 1976.

TABLE 1.0-1. CONVERSION FACTORS

Metric Units	Multiply by	To Obtain English Equivalent
kN/m^2	3.377	in. Hg (at 60°F)
°C	(C x 9/5) + 32	°F
cm^3	6.102×10^{-2}	in^3
cm^2	1.550×10^{-1}	in^2
joules	9.488×10^{-4}	Btu
kg/m^3	6.243×10^{-2}	lb/ft^3
km	6.214×10^{-1}	miles (statute)
kW	3.414×10^3	Btu/hr
m^3	3.531×10^1	ft^3
m^3/sec	3.531×10^1	ft^3/sec
m	3.281	ft
m/sec	3.281	ft/sec
mg	1.5432×10^{-2}	grains
m	3.937×10^1	in.
m^2	1.076×10^1	sq ft
tons (metric)	2.205×10^3	pounds
W	3.414	Btu/hr
cm	2.54	in.

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2.0 Introduction

This section on data input instructions is divided into three principal subsections. The first subsection addresses the encoding criteria for the FPEIS; that is, why certain data must be encoded in a specific way. Data requiring the use of standard nomenclature are given along with tables of allowable entries for those data elements. The standard FPEIS Data Input Form is introduced and examples of encoding the form are given. The concept of the FPEIS data base structure of series, subseries, and run levels is discussed. To eliminate redundant data entry, several labor saving techniques have been developed to aid the user, and these techniques are discussed here.

The second subsection provides general instructions for using the FPEIS Data Input Forms which apply to all data collection activities.

The third subsection gives detailed, card-by-card encoding instructions for each Data Input Form.

2.1 Encoding Criteria

This section provides a general discussion of the encoding criteria for the FPEIS. An overview of the objectives and scope of the FPEIS, a description of the data element grouping and organization, and a discussion of all standard nomenclature and engineering units employed are included. A description of the FPEIS Data Input Form Structure with sample input, labor saving features, and miscellaneous data preparation is also given.

2.1.1 Objectives and Scope of the FPEIS

A typical source/collector combination is shown in Figure 2.1-1. Some of the variations to the typical situation shown may include several sources combined, several control devices in a control system, systems where all or only a part of the effluent is controlled, sampling which may be *in situ* or *ex situ*, sampling with or without sample modification, etc.

The Fine Particle Emissions Information System attempts to characterize the particulate pollutant (aerosol) at the inlet and outlet of a control system by providing data on all the factors affecting its generation, modification, sampling, measurement, and analysis. The FPEIS is designed to contain: (a) characteristics of sources; (b) characteristics of control devices; and (c) characteristics of particulates emitted by various source/collector combinations. The data base may also contain:

- Test particulars;
- Particulate mass train data;
- Particulate physical, bioassay, and chemical properties;
- Measurement instrument/method; and
- Particle size distribution data.

The data base system is designed such that one can get information with respect to:

- A specific test;
- A specific source;
- A specific control device;

- A specific measurement instrument or method; and
- All or a portion of the data.

The FPEIS can accommodate partial data. The number of parameters measured in a test depends upon the objectives of the testing program. It is unlikely that any source tests made will have all the data which the FPEIS is designed to contain. For example, in a given testing program, all the tests may be made at only the inlet or outlet, and the chemical analysis or bioassay may or may not be conducted. It is likely that some of the control device design and operating parameters may not be reported. Even if there is missing data, the available data will be of use and should be reported.

Data from sources or sites for which the company name, location, etc., are, or should, remain confidential can also be accommodated. Arrangements for such cases should be made with the FPEIS project officer (see Section 3.4).

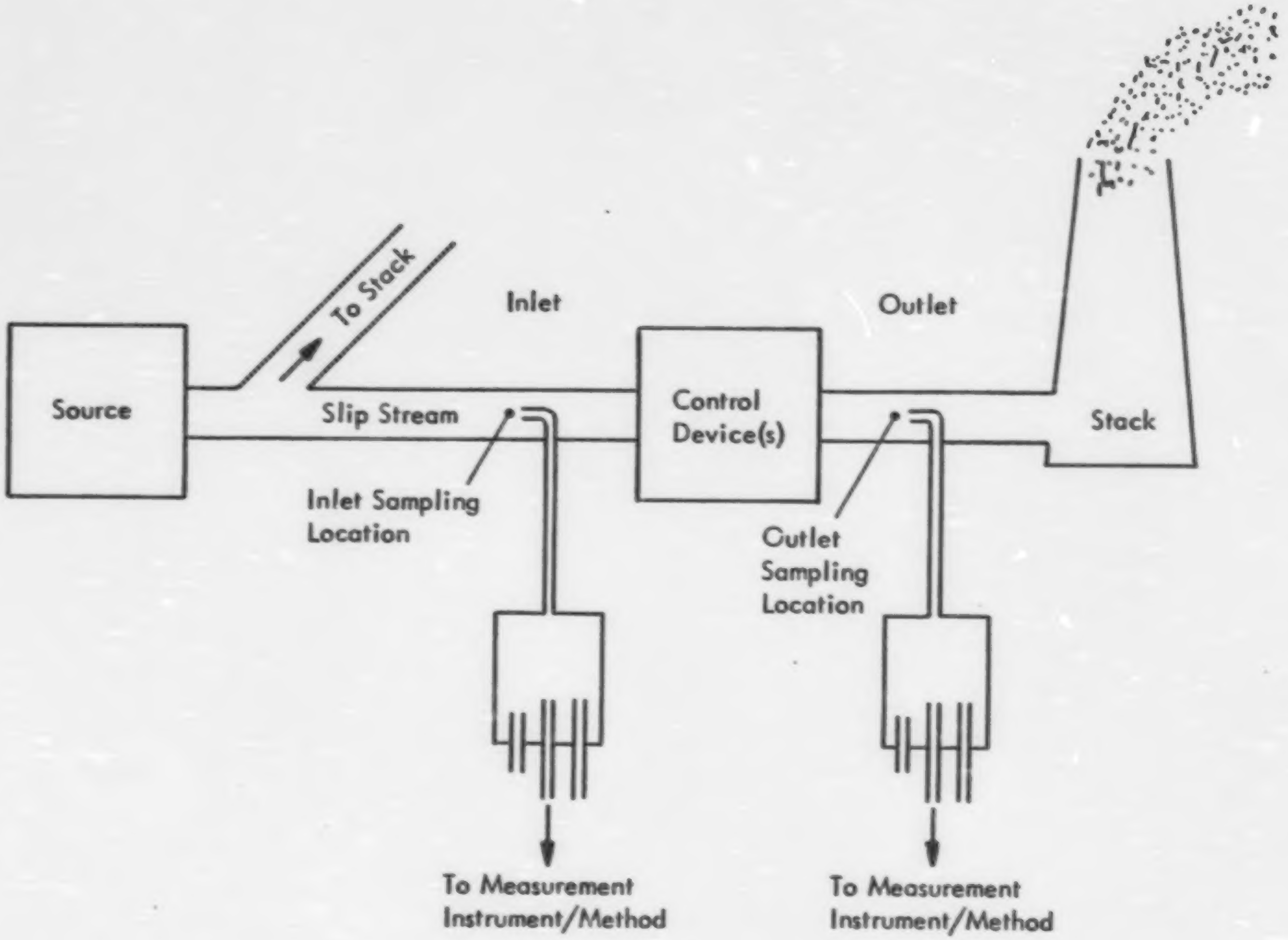

Source
To Stack
Slip Stream
Inlet
Inlet Sampling Location
Control Device(s)
Outlet
Outlet Sampling Location
Stack
To Measurement Instrument/Method
To Measurement Instrument/Method

Figure 2.1-1. Typical Source/Collector Combination.

2.1.2 Data Element Grouping and Organization

Presentation of the information described in Section 2.1-1 requires several data elements. The definition grouping, and organization of these data elements as well as the description of the FPEIS system are provided in detail in the FPEIS Reference Manual (EPA-600/2-76-173). From an organizational standpoint, the various data elements are grouped in one of three levels, that is, the test series level, the subseries level, and the test run level. These levels are shown in Figure 2.1-2. In this figure, one can see that the FPEIS contains several test series, each of which contains one or more test subseries, which in turn consist of one or more test runs. The data which are to be contained at each level are shown in Table 2.1-1, FPEIS Data Elements and Their Levels.

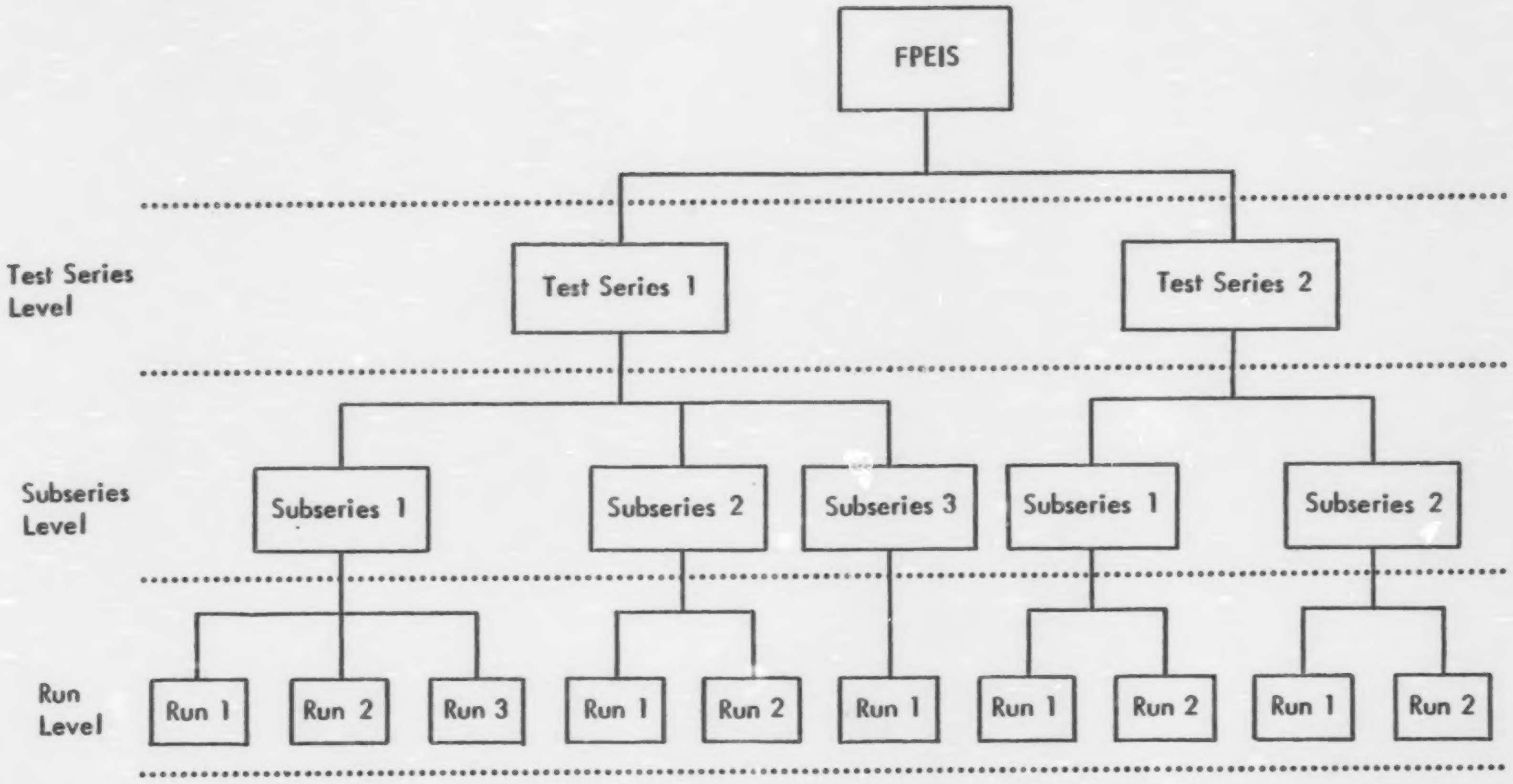

FPEIS
Test Series Level
Test Series 1
Test Series 2
Subseries Level
Subseries 1
Subseries 2
Subseries 3
Subseries 1
Subseries 2
Run Level
Run 1
Run 2
Run 3
Run 1
Run 2
Run 1
Run 1
Run 2
Run 1
Run 2

Figure 2.1-2. FPEIS Structure.

TABLE 2.1-1. FPEIS DATA ELEMENTS AND THEIR LEVELS

Test Series Level	Subseries Level	Run Level
A. **Source Characteristics** Source category (SCC I) Type of operation (SCC II) Feed material class (SCC III) Operating mode class (SCC IV) Site and source name Source address (street, city, state, zip code) UTM zone location and coordinates Test series start and finish date Tested by and reference		
B. **Test Series Remarks**		
C. **Control Device(s) Characteristics** Generic device type Device class and category Device commercial name Manufacturer Description Design parameter type and value		
	D. **Test Characteristics** Test date, start, and finish time Source operating mode Source operating rate Percent design capacity Feed material and its composition Sampling location and its description Volume flow rate, velocity temperature and pressure Percent isokinetic sampling Orsat gas analysis and trace gas Composition Control Device(s) Operating Parameter and Value Remarks	
	E. **Particulate Mass Train Results** Front half and total mass concentration Mass train comments	
	F. **Particulate Physical Properties** Density Resistivity Others	
	G. **Bioassay Data** Bioassay test type Test comments	
	H. **Chemical Composition** Particle boundary diameters Sizing instrument calibrated or calculated SAROAD chemical and analysis method ID Concentration in filter/total Concentration in Ranges 1 through 9	
		I. **Measurement particulars** Measurement instrument/method name Size range lower and upper boundary Collection surface Dilution factor Measurement start time and period Sample flow rate Sample temperature, pressure, and moisture content Comments
		J. **Particulate Size Distribution** Particle diameter basis (Aerodynamic or Stokes) Boundary diameter Concentration basis (mass or number) Concentration

2.1.3 Designation Criteria for Test Series, Test Subseries, and Test Run

The designation of test series, subseries, and run are illustrated in the following example.

The sampling log of a hypothetical coal-fired boiler test is shown in Figure 2.1-3. In this test, a Brinks impactor was used at the inlet and an Andersen impactor, optical particle counter, and a diffusion battery/CNC combination were used at the outlet for making particle size distribution measurements. The boiler load was 120 MW in the morning, and 140 MW in the afternoon. The control device operation was steady throughout the day. In the morning, two runs were made with the Brinks impactor, one with the Andersen impactor, one with the optical particle counter, and one with the diffusion battery/CNC. A similar number of runs were made in the afternoon.

The designation of test series, test subseries, and test run is as follows. Each individual measurement is designated as a test run--the whole set of runs a test series. The group of consecutive runs taken at either the inlet or the outlet of the control device, on a given test date, during the time in which the source/control device operation has been reasonably steady, is designated as test subseries. The premise behind the subseries designation is that the aerosol remains the same as long as the source and control device(s) remain steady. Multiple instruments then can be used to cover the wide range of particle size, or multiple runs can be made with a given instrument. In the example described above (see Figure 2.1-3), the two Brinks impactor runs made at the inlet in the morning are designated as a subseries. The measurements made at the outlet with the Andersen sampler, the optical particle counter, and the diffusion battery/condensation nuclei counter in the morning are designated as another subseries. Similarly other runs are grouped into different subseries.

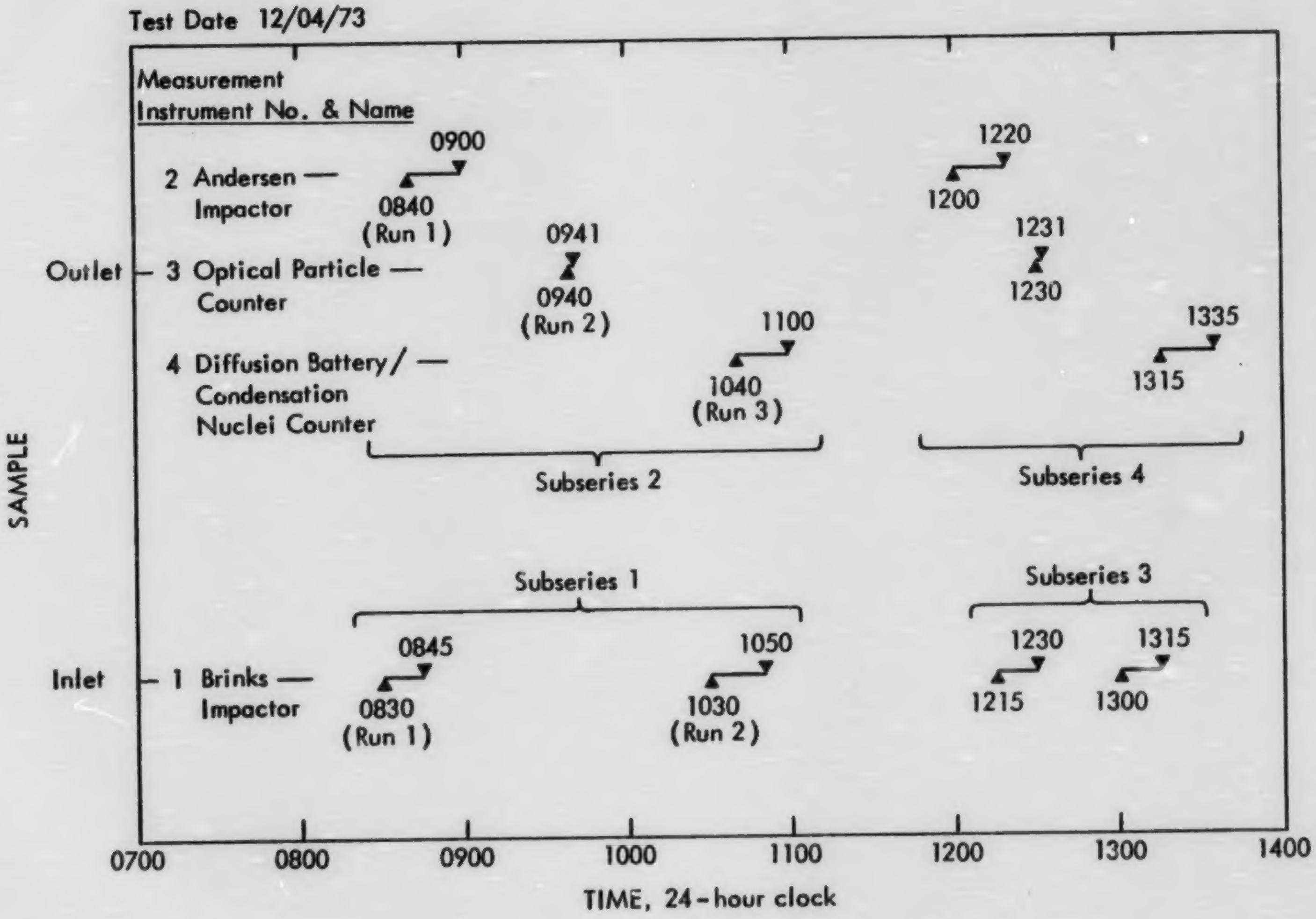


Figure 2.1-3. Sampling Log for 10 Runs.

2.1.4 Data Input Form Structure

The arrangement of data element groups on various data input forms is shown in Table 2.1-1. The layout of the six data input forms is such that the data elements least likely to change are on Form Nos. 1 and 2, and the most likely to change are on Form No. 6; that is, the data input forms follow the same hierarchical arrangement as shown in Figure 2.1-2.

The source description group which includes the name of the source testing contractor and test report reference and the test series remarks are contained on Form No. 1, and control device(s) description and design parameters are contained on Form No. 2. The data on Form Nos. 1 and 2 are at test series level and do not change for a given set of tests on a given source/collector combination.

The test characteristics, including the source and control device(s) operating parameters, and particulate physical, biological and chemical analyses results are on Form Nos. 3 through 5. These data are at the subseries level and represent test runs performed for certain continuous time intervals on a source/control device(s) combination operating at certain operating conditions, or at a given location.

The measurement particulars, and the particle size distribution data are contained on Form No. 6. These data are at the test run level. Because more than one instrument/method may be used to make the size distribution measurement, Form No. 6 is expected to be the most frequently used.

Coding of several runs and subseries of a test series will be clear by observing the data input form structure for test series described in Section 2.1.3. The data input form structure for the first two subseries of the example test is shown in Table 2.1-2. Notice that only forms that are needed are used. Figure 2.1-4 shows all the completed forms.

TABLE 2.1-2. THE DATA INPUT FORM STRUCTURE

Data Input Form No.	Data Coded
1 2	Test Series - Source description and test series remarks control device description and design parameters.
3 4	Subseries 1 - Test characteristics, control device operating parameters, mass train results, particle physical properties.
5	Particulate bioassay and chemical composition data.
6	Subseries 1, Run 1 (Brink impactor data).
6	Subseries 1, Run 2 (Brink impactor data).
3 4	Subseries 2 - Test characteristics, mass train results.
	Form No. 5 is not used as there was no biological or chemical composition data.
6	Subseries 2, Run 1 (Andersen sampler).
6	Subseries 2, Run 2 (Optical particle counter).
6	Subseries 2, Run 3 (Diffusion battery/condensation nuclei counter).

STATIONARY POINT SOURCE
FINE PARTICULATE EMISSIONS INFORMATION SYSTEM
DATA INPUT FORMS

Form 1 12/76

Form Completed by J. SHUM

A - SOURCE DESCRIPTION

Test Series No.	Sub Series No.	Run No.	Card No.	SCC I (Source Category)	SCC II (Type of Operation)	SCC III (Feed Material Class)	Test Series Start Date Mo	Da	Yr	Test Series Finish Date Mo	Da	Yr	UTM Zone
19			A01	EXTCOMB BOILER	ELECTRIC GENERATN	SOLID WASTE/COAL	12	04	73	12	14	73	15

Card No.	SCC IV (Operating Mode Class)	Site Name
A02	G.T. 100MMBTU/HR	MERAMEC PLANT

Card No.	Source Name	Street	City	State
A03	BOILER UNIT 1	8200 FINE ROAD	ST. LOUIS	MO

Card No.	Zip	UTM Coords X	UTM Coords Y	Tested By
A04	63120	7250	4750	MIDWEST RESEARCH INST., KANSAS CITY, MO

Card No.	Reference
A05	SHANNON, L.J., ET AL., EPA-650/2-74-073, AUG. 74

B - TEST SERIES REMARKS

Test Series No.	Sub Series No.	Run No.	Card No.	Remarks in Text
19			B01	IMPACTOR CUT POINTS COMPUTED FROM RANZ AND WONG THEORY
			B02	
			B03	
			B04	
			B05	
			B06	
			B07	
			B08	
			B09	
			B10	

Figure 2.1-4. Sample Completed Data Input Forms.

STATIONARY POINT SOURCE
FINE PARTICULATE EMISSIONS INFORMATION SYSTEM
DATA INPUT FORMS

Form 2 12/76

Form Completed by

C - CONTROL DEVICE(S) CHARACTERISTICS

Test Series No. (1-5)	Sub Series No. (6-8)	Run No. (9-10)	Card No. (11-13)	Device No. (1,2 or 3) (14)	Device Category (16-48)	Device Class (49-60)	Generic Type (61-80)
19			C01	1	PARALLER PLATE ESP	CONVENTIONAL	ESP

Card No. (11-13)	Commercial Name (16-45)	Manufacturer (46-75)
C02	ELECTROSTATIC PRECIPITATOR	RESEARCH COTTRELL

Card No. (11-13)	Device Description (16-75)
C03	2-UNITS IN PARALLEL WITH COMMON INLET DUCT AND SEPARATE OUT-

Card No. (11-13)	Device Description (continued) (16-75)
C04	LET DUCTS.

CONTROL DEVICE(S) DESIGN PARAMETERS

Test Series No. (1-5)	Sub Series No. (6-8)	Run No. (9-10)	Card No. (11-13)	Device No. (1,2 or 3) (14)	Serial No. (17)	Specifications (18-47)	Value (48-67)
19			C05	1	1	ELECTRODE AREA	5174.5 M2
			C05	1	2	CORONA WIRE DIA.	2.8 MM
			C05	1	3	PLATE TO PLATE SPACING	238 MM
			C05				
			C05				
			C05				
			C05				
			C05				
			C05				
			C05				
			C05				
			C05				
			C05				
			C05				
			C05				
			C05				
			C05				
			C05				
			C05				
			C05				

Figure 2.1-4. Continued.

STATIONARY POINT SOURCE
FINE PARTICULATE EMISSIONS INFORMATION SYSTEM
DATA INPUT FORMS

Form 3 12/76

Form Completed by

D - TEST CHARACTERISTICS

Test Series No.	Sub Series No.	Run No.	Card No.	Control Device Inlet or Outlet (I or 0)	Date Mo	Date Da	Date Yr	Start Time	Stop Time	Source Operating Mode*	Source Operating Rate*	% Design Capacity*
19	1		D01	I	12	04	73	0830	1100	COAL+REFUSE BURNING	120 MW	100

Card No.	Feed Material*	Feed Material Composition*
D02	ORIENT 6 COAL AND MUN. REFUSE	9% REFUSE

Card No.	Sampling Location Description*	Volume Flow Rate*	Velocity*	Temp.*	Press.*	% H_2O*	% Iso Kinetic*
D03	ABOUT 3M FROM BEND (RAD. OF CURV.=2.3M)	169	204	164	760	85	100

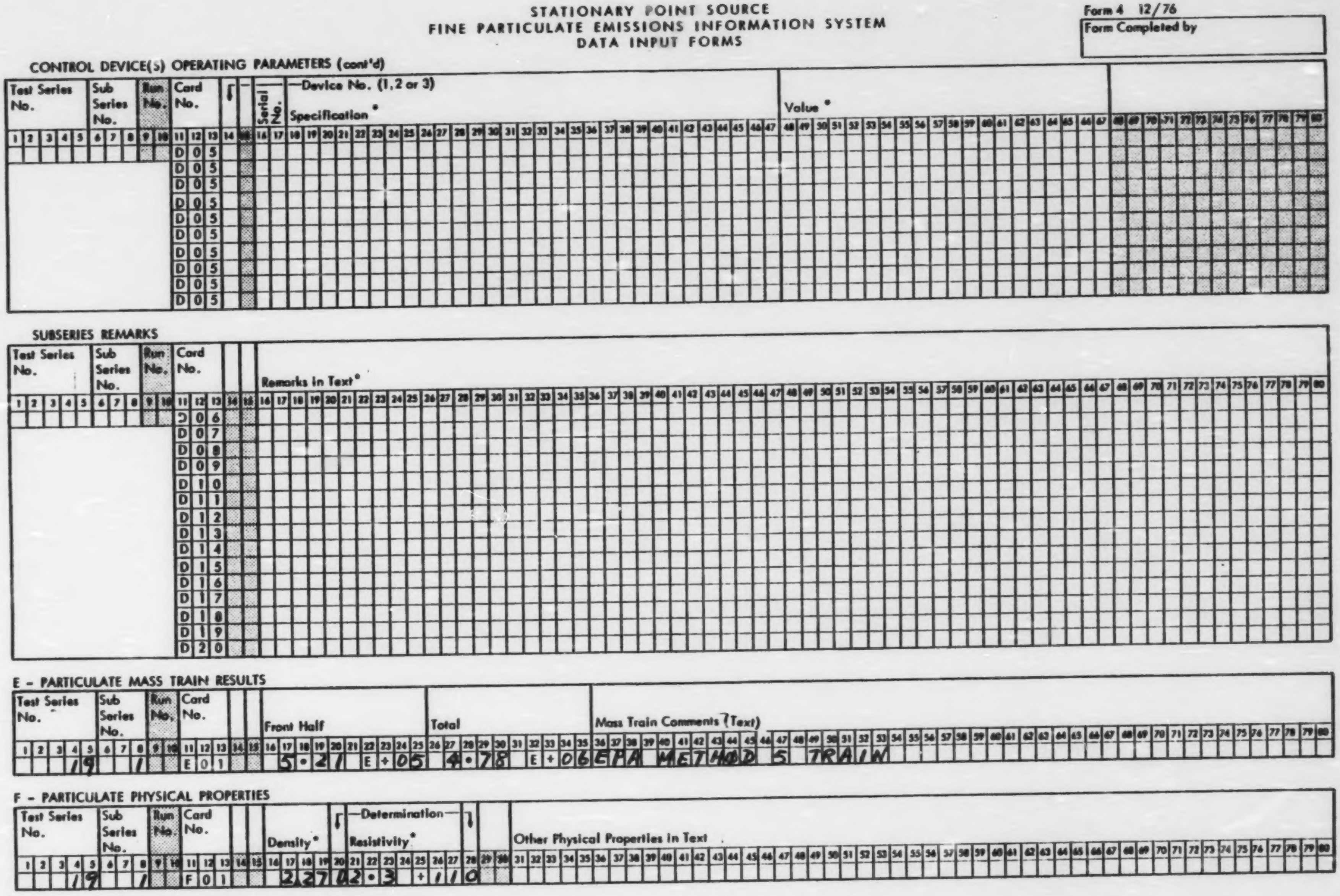
Card No.	CO_2*	CO*	O_2*	N_2*	Trace Gases in ppm (Text)*
D04	145	01	65	79	SO2=900, SO3=0, NO=220

CONTROL DEVICE(S) OPERATING PARAMETERS

Test Series No.	Sub Series No.	Run No.	Card No.	Device No. (1,2 or 3)	Serial No.	Specification*	Value*
19	1		D05	1	1	VOLUMETRIC FLOW RATE	230.1 M3/S
			D05	1	2	APPLIED VOLTAGE	32 KV
			D05	1	3	CORONA CURRENT	253 MAMP
			D05	1	4	POWER	8 KW
			D05	1	5	SPARK RATE	115/MIN
			D05				
			D05				
			D05				
			D05				
			D05				
			D05				
			D05				
			D05				
			D05				
			D05				
			D05				
			D05				
			D05				
			D05				
			D05				

* Need not be filled if the preceding subseries contains the same data.

Figure 2.1-4. Continued.



STATIONARY POINT SOURCE
FINE PARTICULATE EMISSIONS INFORMATION SYSTEM
DATA INPUT FORMS

Form 4 12/76

Form Completed by

CONTROL DEVICE(S) OPERATING PARAMETERS (cont'd)

Test Series No. (1-5)	Sub Series No. (6-8)	Run No. (9-10)	Card No. (11-13)	14	15	Serial No. (16-17) / Device No. (1,2 or 3) / Specification * (18-47)	Value * (48-67)	(68-80)
			D05					
			D05					
			D05					
			D05					
			D05					
			D05					
			D05					
			D05					
			D05					
			D05					

SUBSERIES REMARKS

Test Series No. (1-5)	Sub Series No. (6-8)	Run No. (9-10)	Card No. (11-13)	14	15	Remarks in Text * (16-80)
			D06			
			D07			
			D08			
			D09			
			D10			
			D11			
			D12			
			D13			
			D14			
			D15			
			D16			
			D17			
			D18			
			D19			
			D20			

E - PARTICULATE MASS TRAIN RESULTS

Test Series No. (1-5)	Sub Series No. (6-8)	Run No. (9-10)	Card No. (11-13)	14	15	Front Half (16-25)	Total (26-35)	Mass Train Comments (Text) (36-80)
19	1		E01			5.21 E+05	4.78 E+06	EPA METHOD 5 TRAIN

F - PARTICULATE PHYSICAL PROPERTIES

Test Series No. (1-5)	Sub Series No. (6-8)	Run No. (9-10)	Card No. (11-13)	14	15	Density * (16-19)	Determination (20)	Resistivity * (21-27)	Determination (28)	29	30	Other Physical Properties in Text (31-80)
19	1		F01			2.27	0	2.3 +11	0			

* Need not be filled if the preceding subseries contains the same data.

Figure 2.1-4. Continued.

STATIONARY POINT SOURCE
FINE PARTICULATE EMISSIONS INFORMATION SYSTEM
DATA INPUT FORMS

Form 5 12/76

Form Completed by

G - PARTICULATE BIOASSAY DATA

Test Series No. (1-5)	Sub Series No. (6-8)	Run No. (9-10)	Card No. (11-13)	14	15	Bioassay Test Type (16-35)	Bioassay Comments (36-80)
			G01				
			G01				
			G01				
			G01				
			G01				

H - CHEMICAL COMPOSITION

—Aerodynamic/Stokes Diameter (1 or 0)

—Calib or Calc (1 or 0)

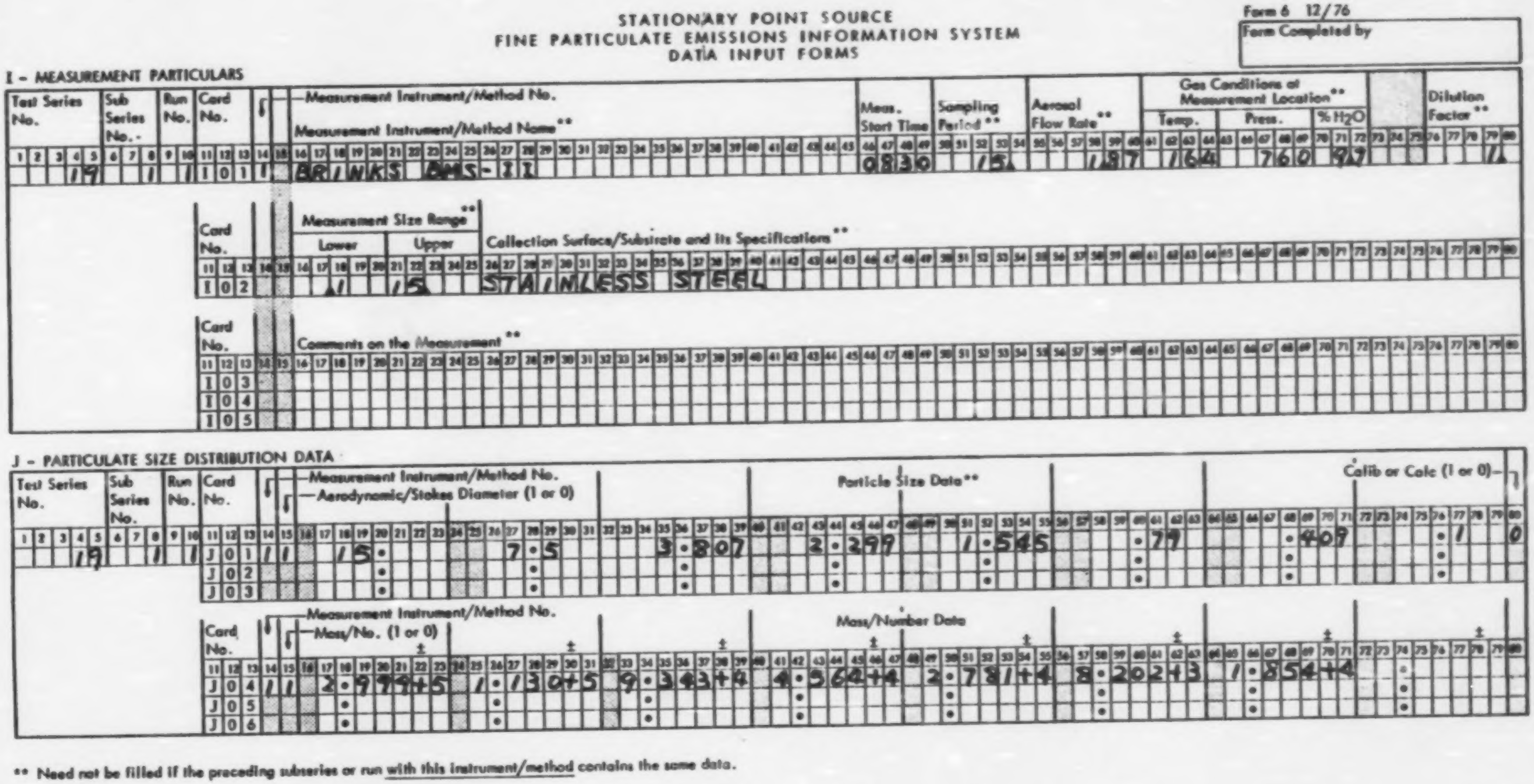
Test Series No. (1-5)	Sub Series No. (6-8)	Run No. (9-10)	Card No. (11-13)	14	15	16-18	Aerodynamic/Stokes Diameter (19)	Calib or Calc (20)	Upper Boundary Diameter (21-26)	Particle Boundary Diameter* ①	②	③	④	⑤	⑥	⑦	⑧	⑨
19	1		H01				1	0	15.	7.5	3.8	2.3	1.5	.79	.41	.1	.	.

Analysis I.D.

Card No. (11-13)	14	15	Chemical I.D. (16-19)	↓ (20)	Mass Train Filter or Pooled Stages (21-26)	Chemical Concentration (μg/m³) ① ±	② ±	③ ±	④ ±	⑤ ±	⑥ ±	⑦ ±	⑧ ±	⑨ ±
H02			2105	A	.	2.1 +1	4.6 +0	7.6 +0	4.1 +0	4.7 +0	1.79+0	4.81+0	.	.
H02			2110	A	.	1.9 +2	4.0 +1	1.43+2	8.0 +1	1.7 +2	2.22+1	2.93+1	.	.
H02			2112	A	.	1.21+3	2.19+2	3.99+2	9.40+2	2.67+3	2.24+2	8.63+1	.	.
H02			2113	A	.	9.2 +1	2.2 +1	2.5 +1	2.4 +1	4.98+1	3.7 +0	3.3 +0	.	.
H02			2114	A	.	2.9 +2	1.28+2	2.27+2	1.32+2	4.9 +2	7.32+2	1.68+2	.	.
H02			2128	A	.	4.26+1	1.26+1	1.35+1	2.57+1	1.01+1	9.14−1	5.06−1	.	.
H02			2132	A	.	5.66+2	1.30+2	2.39+2	1.65+2	4.95+2	3.25+1	3.43+1	.	.
H02			2136	A	.	1.43+3	4. +2	7.31+2	6. +2	2.76+3	3.43+1	6.87+1	.	.
H02			2171	A	.	1.1 +1	1.9 +0	7.9 +0	2.6 +0	5.54+0	8.64−1	2.04+0	.	.
H02			2173	A	.	3.8 +0	1. +0	1.2 +0	1.8 +0	4.1 +0	7.38+0	2.71+0	.	.
H02			2160	A	.	1.3 +1	8.1 +0	6.6 +0	3.7 +0	9. 02	2.3 +0	1.63+0	.	.
H02			2164	A	.	1.43+3	4.14+2	7.13+2	5.16+2	6.46+2	7.71+1	9.77+1	.	.
H02			2167	A	.	1.35+3	6.89+2	9.66+2	6.80+2	3.32+3	2.24+2	3.03+2	.	.
H02			2111	A	.	7.3 +4	1.68+4	2.94+4	1.68+4	6.71+4	4.20+3	6.90+3	.	.
H02			2126	A	.	4.26+5	1.26+5	1.35+5	2.57+5	1.65+5	9.14+3	5.06+3	.	.
H02					.	.	.	.	.	.	.	.	.	.
H02					.	.	.	.	.	.	.	.	.	.
H02					.	.	.	.	.	.	.	.	.	.
H02					.	.	.	.	.	.	.	.	.	.
H02					.	.	.	.	.	.	.	.	.	.
H02					.	.	.	.	.	.	.	.	.	.
H02					.	.	.	.	.	.	.	.	.	.
H02					.	.	.	.	.	.	.	.	.	.
H02					.	.	.	.	.	.	.	.	.	.
H02					.	.	.	.	.	.	.	.	.	.

* Need not be filled if the preceding subseries contains the same data.

Figure 2.1-4. Continued.



Form 6 12/76

Form Completed by

STATIONARY POINT SOURCE
FINE PARTICULATE EMISSIONS INFORMATION SYSTEM
DATA INPUT FORMS

I - MEASUREMENT PARTICULARS

Test Series No. (1-5)	Sub Series No. (6-8)	Run No. (9-10)	Card No. (11-13)	14	Measurement Instrument/Method No. (15)	Measurement Instrument/Method Name** (16-45)	Meas. Start Time (46-49)	Sampling Period** (50-54)	Aerosol Flow Rate** (55-60)	Gas Conditions at Measurement Location** Temp. (61-64)	Press. (65-69)	% H_2O (70-72)	(73-75)	Dilution Factor** (76-80)
19	1	1	I01	1		BRINKS BMS-II	0830	15	187	164	760	97		1

Card No. (11-13)	14	15	Measurement Size Range** Lower (16-20)	Upper (21-25)	Collection Surface/Substrate and Its Specifications** (26-80)
I02			1	15	STAINLESS STEEL

Card No. (11-13)	14	15	Comments on the Measurement** (16-80)
I03			
I04			
I05			

J - PARTICULATE SIZE DISTRIBUTION DATA

Test Series No. (1-5)	Sub Series No. (6-8)	Run No. (9-10)	Card No. (11-13)	Measurement Instrument/Method No. (14)	Aerodynamic/Stokes Diameter (1 or 0) (15)	Particle Size Data** (16-23)	(24-31)	(32-39)	(40-47)	(48-55)	(56-63)	(64-71)	(72-79)	Calib or Calc (1 or 0) (80)
19	1	1	J01	1	1	15.	7.5	3.807	2.297	1.545	.79	.409	.1	0
			J02			.	.	.	.	.	.	.	.	
			J03			.	.	.	.	.	.	.	.	

Card No. (11-13)	Measurement Instrument/Method No. (14)	Mass/No. (1 or 0) (15)	Mass/Number Data (16-23) ±	(24-31) ±	(32-39) ±	(40-47) ±	(48-55) ±	(56-63) ±	(64-71) ±	(72-79) ±	80
J04	1	1	2.979+5	1.130+5	9.343+4	4.564+4	2.781+4	8.202+3	1.854+4	.	
J05			.	.	.	.	.	.	.	.	
J06			.	.	.	.	.	.	.	.	

** Need not be filled if the preceding subseries or run with this instrument/method contains the same data.

Figure 2.1-4. Continued.

Form 6 12/76

Form Completed by

STATIONARY POINT SOURCE
FINE PARTICULATE EMISSIONS INFORMATION SYSTEM
DATA INPUT FORMS

I - MEASUREMENT PARTICULARS

Test Series No. (1-5)	Sub Series No. (6-8)	Run No. (9-10)	Card No. (11-13)	Measurement Instrument/Method No. (14)	Measurement Instrument/Method Name** (16-45)	Meas. Start Time (46-49)	Sampling Period** (50-54)	Aerosol Flow Rate** (55-60)	Gas Conditions at Measurement Location** Temp. (61-64)	Press. (65-69)	% H_2O (70-72)	(73-75)	Dilution Factor** (76-80)
19	1	2	I01	1		1030	20		158		9		

Card No. (11-13)	Measurement Size Range** Lower (16-20)	Upper (21-25)	Collection Surface/Substrate and Its Specifications** (26-80)
I02			

Card No. (11-13)	Comments on the Measurement** (16-80)
I03	
I04	
I05	

J - PARTICULATE SIZE DISTRIBUTION DATA

Test Series No. (1-5)	Sub Series No. (6-8)	Run No. (9-10)	Card No. (11-13)	Measurement Instrument/Method No. (14)	Aerodynamic/Stokes Diameter (1 or 0) (15)	Particle Size Data** (16-23)	(24-31)	(32-39)	(40-47)	(48-55)	(56-63)	(64-71)	(72-79)	Calib or Calc (1 or 0) (80)
19	1	2	J01			.	.	.	.	.	.	.	.	
			J02			.	.	.	.	.	.	.	.	
			J03			.	.	.	.	.	.	.	.	

Card No. (11-13)	Measurement Instrument/Method No. (14)	Mass/No. (1 or 0) (15)	Mass/Number Data ± (16-23)	± (24-31)	± (32-39)	± (40-47)	± (48-55)	± (56-63)	± (64-71)	± (72-79)
J04	1	1	2.497+6	4.783+5	1.469+5	4.208+4	3.455+3	0.	8.794+3	.
J05			.	.	.	.	.	.	.	.
J06			.	.	.	.	.	.	.	.

** Need not be filled if the preceding subseries or run with this instrument/method contains the same data.

Figure 2.1-4. Continued.

STATIONARY POINT SOURCE
FINE PARTICULATE EMISSIONS INFORMATION SYSTEM
DATA INPUT FORMS

Form 3 12/76

Form Completed by

D - TEST CHARACTERISTICS

Test Series No. 1 2 3 4 5	Sub Series No. 6 7 8	Run No. 9 10	Card No. 11 12 13	14	Control Device Inlet or Outlet (I or Ø) 15	Test Sub Series Date Mo Da Yr 16 17 18 19 20 21	Start Time 22 23 24 25	Stop Time 26 27 28 29	Source Operating Mode* 30–59	Source Operating Rate* 60–76	% Design Capacity* 77 78 79 80
19	2		D01		Ø	120473	0840	1100			

Card No. 11 12 13	14	15	Feed Material* 16–45	Feed Material Composition* 46–80
D02				

Card No. 11 12 13	14	15	Sampling Location Description* 16–55	Volume Flow Rate* 56–61	Velocity* 62–65	Temp.* 66–69	Press.* 70–74	% H2O* 75–77	% Iso Kinetic* 78–80
D03			SAMPLING PORTS IMMEDIATELY BEHIND AN ELB	1417	157	166			

Card No. 11 12 13	14	15	CO2* 16–19	CO* 20–23	O2* 24–27	N2* 28–31	Trace Gases in ppm (Text)* 32–80
D04							

CONTROL DEVICE(S) OPERATING PARAMETERS

Test Series No. 1 2 3 4 5	Sub Series No. 6 7 8	Run No. 9 10	Card No. 11 12 13	Device No. (1,2 or 3) 14	15	Serial No. 16 17	Specification* 18–47	Value* 48–67	68–80
19	2		D05	1		5		108/MIN	
			D05						
			D05						
			D05						
			D05						
			D05						
			D05						
			D05						
			D05						
			D05						
			D05						
			D05						
			D05						
			D05						
			D05						
			D05						
			D05						
			D05						
			D05						
			D05						

* Need not be filled if the preceding subseries contains the same data.

Figure 2.1-4. Continued.

STATIONARY POINT SOURCE
FINE PARTICULATE EMISSIONS INFORMATION SYSTEM
DATA INPUT FORMS

Form 4 12/76

Form Completed by

CONTROL DEVICE(S) OPERATING PARAMETERS (cont'd)

Test Series No. (1–5)	Sub Series No. (6–8)	Run No. (9–10)	Card No. (11–13)	14	15	Serial No. (16–17)	Device No. (1, 2 or 3) Specification* (18–47)	Value* (48–67)	(68–80)
			D05						
			D05						
			D05						
			D05						
			D05						
			D05						
			D05						
			D05						
			D05						
			D05						

SUBSERIES REMARKS

Test Series No. (1–5)	Sub Series No. (6–8)	Run No. (9–10)	Card No. (11–13)	14	15	Remarks in Text* (16–80)
			D06			
			D07			
			D08			
			D09			
			D10			
			D11			
			D12			
			D13			
			D14			
			D15			
			D16			
			D17			
			D18			
			D19			
			D20			

E – PARTICULATE MASS TRAIN RESULTS

Test Series No. (1–5)	Sub Series No. (6–8)	Run No. (9–10)	Card No. (11–13)	14	15	Front Half (16–25)	Total (26–35)	Mass Train Comments (Text) (36–80)
19	2		E01			1•34 E+04	2•067E+05	

F – PARTICULATE PHYSICAL PROPERTIES

Test Series No. (1–5)	Sub Series No. (6–8)	Run No. (9–10)	Card No. (11–13)	14	15	Density* (16–19)	20	Determination Resistivity* (21–27)	28	29	30	Other Physical Properties in Text (31–80)
19	2		F01					2•4 +11	0			

* Need not be filled if the preceding subseries contains the same data.

Figure 2.1-4. Continued.

Form 6 12/76

Form Completed by

STATIONARY POINT SOURCE
FINE PARTICULATE EMISSIONS INFORMATION SYSTEM
DATA INPUT FORMS

I - MEASUREMENT PARTICULARS

Test Series No. (1-5)	Sub Series No. (6-8)	Run No. (9-10)	Card No. (11-13)	Measurement Instrument/Method No. (14)	(15)	Measurement Instrument/Method Name** (16-45)	Meas. Start Time (46-49)	Sampling Period** (50-54)	Aerosol Flow Rate** (55-60)	Gas Conditions at Measurement Location** Temp. (61-64)	Press. (65-69)	% H_2O (70-72)	(73-75)	Dilution Factor** (76-80)
19	2	1	I01	2		ANDERSEN MODEL IV	0840	20	2022	166	760	85		1

Card No. (11-13)	(14)	(15)	Measurement Size Range** Lower (16-20)	Upper (21-25)	Collection Surface/Substrate and its Specifications** (26-80)
I02			N	15	GLASS FIBER FILTER

Card No. (11-13)	(14)	(15)	Comments on the Measurement** (16-80)
I03			IMPACTOR OPERATED HORIZONTALLY
I04			
I05			

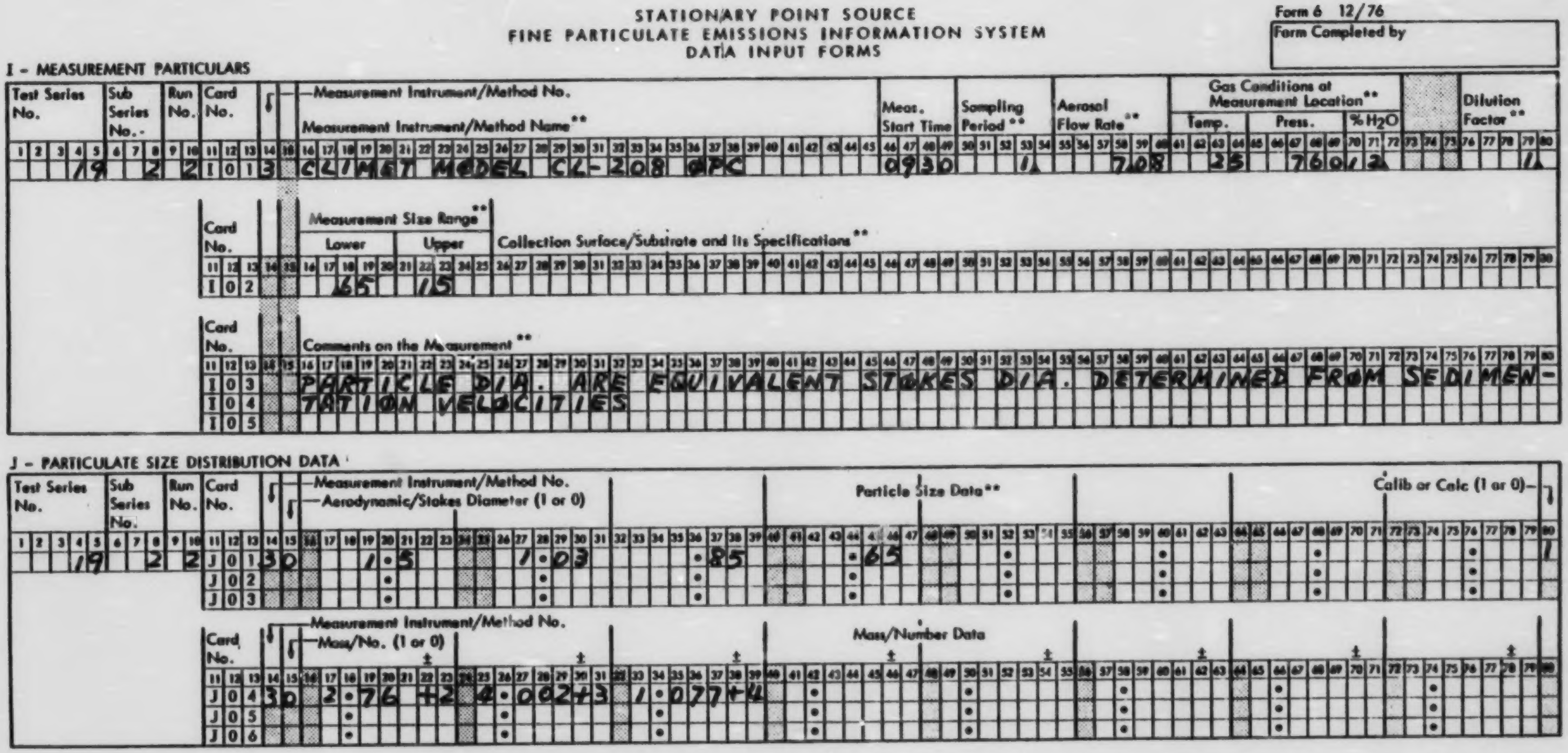
J - PARTICULATE SIZE DISTRIBUTION DATA

Test Series No. (1-5)	Sub Series No. (6-8)	Run No. (9-10)	Card No. (11-13)	Measurement Instrument/Method No. (14)	Aerodynamic/Stokes Diameter (1 or 0) (15)	Particle Size Data** (16-23)	(24-31)	(32-39)	(40-47)	(48-55)	(56-63)	(64-71)	(72-79)	Calib or Calc (1 or 0) (80)
19	2	1	J01	2	1	15.	11.5	7.18	4.86	3.31	2.12	1.06	.65	0
			J02			.44	.1	.	.	.	.	.	.	
			J03			.	.	.	.	.	.	.	.	

Card No. (11-13)	Measurement Instrument/Method No. (14)	Mass/No. (1 or 0) (15)	Mass/Number Data ± (16-23)	± (24-31)	± (32-39)	± (40-47)	± (48-55)	± (56-63)	± (64-71)	± (72-79)	(80)
J04	2	1	1.476+4	1.387+4	1.582+4	9.097+3	1.433+4	1.508+4	4.253+3	2.397+3	
J05			4.75 +3	.	.	.	.	.	.	.	
J06			.	.	.	.	.	.	.	.	

** Need not be filled if the preceding subseries or run with this instrument/method contains the same data.

Figure 2.1-4. Continued.



STATIONARY POINT SOURCE
FINE PARTICULATE EMISSIONS INFORMATION SYSTEM
DATA INPUT FORMS

Form 6 12/76

Form Completed by

I - MEASUREMENT PARTICULARS

Test Series No. (1-5)	Sub Series No. (6-8)	Run No. (9-10)	Card No. (11-13)	Measurement Instrument/Method No. (14)	(15)	Measurement Instrument/Method Name** (16-45)	Meas. Start Time (46-49)	Sampling Period** (50-54)	Aerosol Flow Rate** (55-60)	Gas Conditions at Measurement Location** Temp. (61-64)	Press. (65-69)	% H_2O (70-72)	(73-75)	Dilution Factor** (76-80)
19	2	2	I01	3		CLIMET MODEL CL-208 OPC	0930	1	708	25	760	12		1

Card No. (11-13)	(14)	(15)	Measurement Size Range** Lower (16-20)	Upper (21-25)	Collection Surface/Substrate and Its Specifications** (26-80)
I02			65	15	

Card No. (11-13)	(14)	(15)	Comments on the Measurement** (16-80)
I03			PARTICLE DIA. ARE EQUIVALENT STOKES DIA. DETERMINED FROM SEDIMEN-
I04			TATION VELOCITIES
I05			

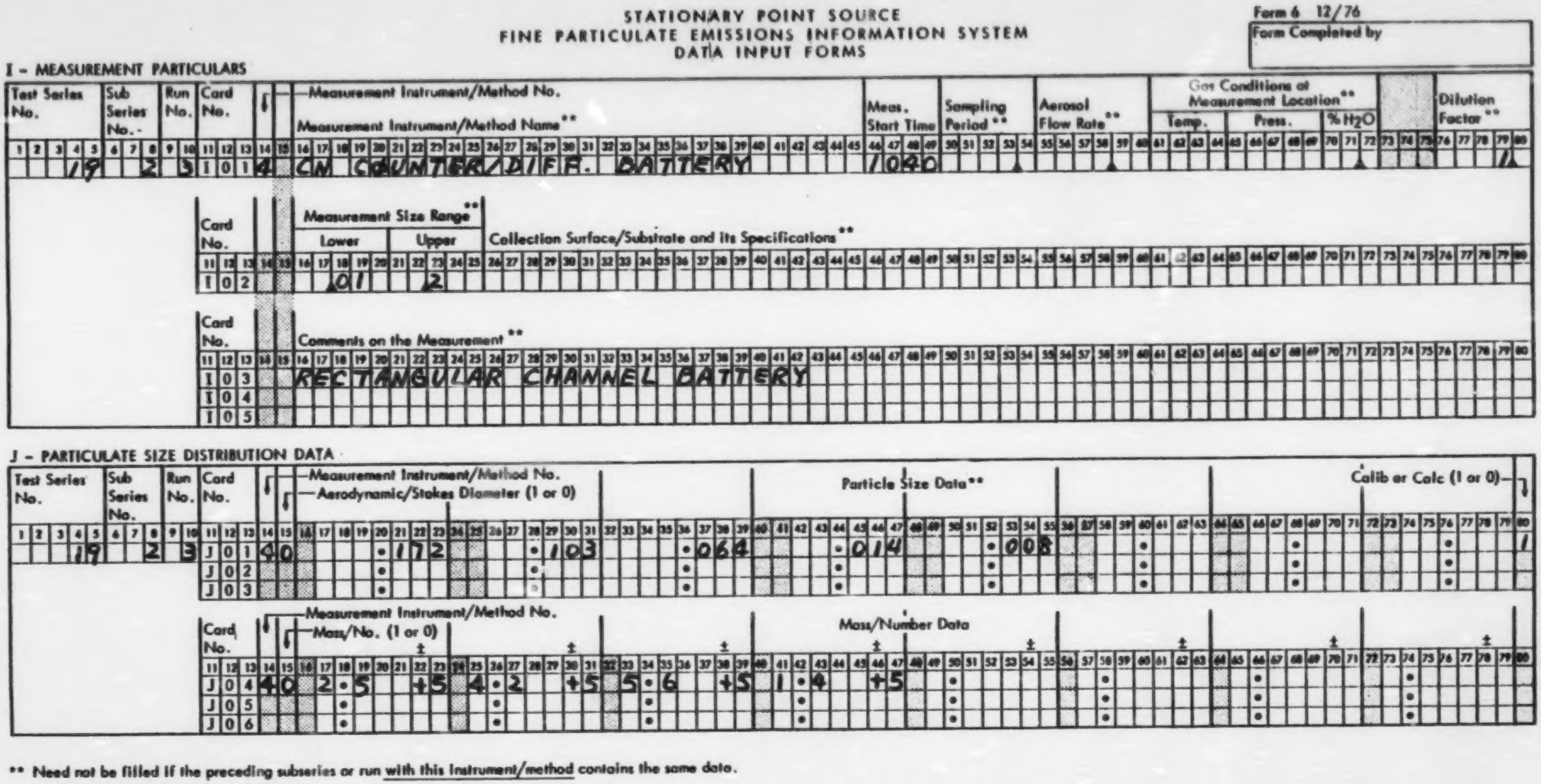
J - PARTICULATE SIZE DISTRIBUTION DATA

Test Series No. (1-5)	Sub Series No. (6-8)	Run No. (9-10)	Card No. (11-13)	Measurement Instrument/Method No. (14)	Aerodynamic/Stokes Diameter (1 or 0) (15)	Particle Size Data** (16-23)	(24-31)	(32-39)	(40-47)	(48-55)	(56-63)	(64-71)	(72-79)	Calib or Calc (1 or 0) (80)
19	2	2	J01	3	0	1.5	1.03	.85	.65	.	.	.	.	1
			J02			.	.	.	.	.	.	.	.	
			J03			.	.	.	.	.	.	.	.	

Card No. (11-13)	Measurement Instrument/Method No. (14)	Mass/No. (1 or 0) (15)	Mass/Number Data (16-23) ±	(24-31) ±	(32-39) ±	(40-47) ±	(48-55) ±	(56-63) ±	(64-71) ±	(72-79) ±
J04	3	0	2.76 +2	4.002 +3	1.077 +4	.	.	.	.	.
J05			.	.	.	.	.	.	.	.
J06			.	.	.	.	.	.	.	.

** Need not be filled if the preceding subseries or run with this instrument/method contains the same data.

Figure 2.1-4. Continued.



STATIONARY POINT SOURCE
FINE PARTICULATE EMISSIONS INFORMATION SYSTEM
DATA INPUT FORMS

Form 6 12/76

Form Completed by

I - MEASUREMENT PARTICULARS

Test Series No.	Sub Series No.	Run No.	Card No.	Measurement Instrument/Method No.	Measurement Instrument/Method Name**	Meas. Start Time	Sampling Period**	Aerosol Flow Rate**	Gas Conditions at Measurement Location** Temp.	Press.	% H_2O	Dilution Factor**
19	2	3	I01	4	CM COUNTER/DIFF. BATTERY	1040						1

Card No.	Measurement Size Range** Lower	Upper	Collection Surface/Substrate and its Specifications**
I02	.01	2	

Card No.	Comments on the Measurement**
I03	RECTANGULAR CHANNEL BATTERY
I04	
I05	

J - PARTICULATE SIZE DISTRIBUTION DATA

Test Series No.	Sub Series No.	Run No.	Card No.	Measurement Instrument/Method No.	Aerodynamic/Stokes Diameter (1 or 0)	Particle Size Data**									Calib or Calc (1 or 0)
19	2	3	J01	4	0	.172	.103	.064	.014	.008	.	.	.	.	1
			J02			.	.	.	.	.	.	.	.	.	
			J03			.	.	.	.	.	.	.	.	.	

Card No.	Measurement Instrument/Method No.	Mass/No. (1 or 0)	Mass/Number Data	±		±		±		±		±		±		±		±
J04	4	0	2.5	5	4.2	5	5.6	5	1.4	5	.		.		.		.	
J05			.		.		.		.		.		.		.		.	
J06			.		.		.		.		.		.		.		.	

** Need not be filled if the preceding subseries or run with this instrument/method contains the same data.

Figure 2.1-4. Concluded.

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2.1.5 Labor Saving Features

In developing the data input forms and the data processing programs, several labor saving features have been introduced. These features reduce time, labor, and cost on the part of the encoder, and eliminate keypunching and verifying costs on the part of the data manager. However, misunderstanding of these features may result in the entering of erroneous data. The labor saving features are explained below. If the explanation is not clear, the safe rule to remember is "if in doubt, fill it out."

The important labor saving feature is "fill in only new information." In other words, there is no need to code duplicate information if it is not different from previous runs or subseries. If there are missing data instead of duplicate data, enter "NA" for alphanumeric data and "9" in every column of numeric data. As an example, suppose the source operating mode (Card D01, Columns 30 through 59) is the same from Subseries 10 through 20 in a test, then it is sufficient to code source operating mode for the 10th subseries. For Subseries 11 through 20, the information of the 10th subseries will be copies. Note, however, if source operating mode for Subseries 10 through 14 and Subseries 16 through 20 is the same, but for Subseries 15 is different--it is necessary to code source operating mode for Subseries 10, 15, and 16. For the rest of the subseries, information from their preceding subseries will be copied. All the data elements which are to be duplicated this way are marked with a star (*) on the input forms.

The data elements on Data Input Form No. 6 marked with "**", associated with measurement instrument/method, are automatically duplicated by the input EDIT computer program. For these data elements, only those data are coded which are new or different from the data for the measurement instrument/method in consideration.

The serial number for the control device operating parameter is also a labor saving feature. If all but a few control device operating parameters change from subseries to subseries, one need to code only the serial numbers of the operating parameters that changed as given for the first subseries and the new parameter values. From the serial number, the parameter description will be decoded. The parameters that did not vary need not be coded, as the EDIT program automatically duplicates them for the new subseries. This feature is quite useful for coding data of concurrent sampling of the inlet and outlet. An example of this feature is shown in Figure 2.1-4.

2.1.6 Standard Nomenclature and Units

Computerized information systems require that some standardization of data be present in order for specific data selection to be made. Computers search for and select data by comparing the selected value to a known value. When alphanumeric characters are used, such as in the name of a control device, the known value and the selected value must match exactly. For example, if a search is made for the value "ESP", all entries in the data base whose value is "ESP" will be selected; however, entries having the value "ELECTROSTATIC PRECIPITATOR" will not although it is technically correct. Insofar as the computer is concerned, the two data are not equal and the selection will fail.

To ensure that uniform selection criteria are possible, the FPEIS uses standard nomenclature for certain data elements. Whenever data from one of these data elements is requested, it is essential that correct spelling be used or the request will fail.

Data elements in the FPEIS data base which require the use of standard nomenclature are given in Table 2.1-4. For these data elements, the encoder must select terms from a specified list (or menu) to describe the data of interest. While this list is expandable and will likely be expanded on a continuing basis, the encoder should use only the list of names provided. As is the case for any encoding of data, correct spelling is essential.

The allowed data for data elements requiring standard nomenclature are given in Tables 2.1-4 through 2.1-13. The specific use of each value is discussed in detail in Section 2.3; however, it is appropriate here to discuss the general criteria for using standard nomenclature on a group basis.

2.1.6.1 Source Description

Of the five data elements shown in Table 2.1-3 requiring standard nomenclature, all but one (STATE) require use of the NEDS Source Classification Codes (SCC). The allowed data values for each data element are given in Table 2.1-4, NEDS Source Classification Codes. Note that the values to be used are the word phrases and not the numeric code.

The reason for using the words rather than the numeric code for the SCC data is twofold. First, the numering scheme within Source Categories is not unique, that is the Source Category, Type of Operation, and Feed Material Class are all interrelated depending upon the Source Category. For example, the code 1-01-001-xx refers to EXTCOMB BOILER, ELECTRIC GENERATN, and ANTHRACITE COAL; however, if the Source Category is changed to INTERNL COMBUSTION for ELECTRIC GENERATN, the code 2-01-001-xx means that DISTILLATE OIL is the fuel. This means that unless burdensome qualification was used, major groups of sources using the same type of fuel could not be identified. By using the wording for each SCC entry, unique values may be obtained which will enable unqualified sorting of all data. This greatly increases the flexibility and usability of the FPEIS data base.

The data element for STATE requires use of the standard U.S. Postal Service two-letter abbreviation as given in Table 2.1-5.

2.1.6.2 Control Device Characteristics and Design Parameters

Data elements pertaining to fine particle control devices have been grouped to enable the user to describe the device in treat detail. In order to allow for maximum sorting and retrieval flexibility, some data elements that describe the device have been assigned standard nomenclature. These data elements are: Device Category, Device Class, and Generic Device Type. The allowed data for these Device Class and Generic Device Type are given in Table 2.1-6.

The Device Category data element allows descriptive words to be encoded as a phrase or string of words to characterize the device. The key words allowed are given in Table 2.1-7.

Specific allowable DESIGN SPECIFICATION TYPE nomenclature is given in Table 2.1-8 along the units to be used to express the value. This list is designed to be the minimum information list for each device type given. The user may add more specifications and values if he so chooses up to a maximum of 20 per device.

2.1.6.3 Test Characteristics and Control Device Operating Parameters

The SAMPLING LOCATION data element is identified by its position relative to the control device as either inlet or outlet. The allowed data to be encoded are as follows:

I (for inlet)

O (for outlet)

If the source has no control device applied, then an "I" should be encoded.

The FPEIS also has control device operating parameters and values in addition to the design specifications and values. Allowed data for the TYPICAL OPERATING PARAMETER TYPE and the units in which the data values are to expressed are given in Table 2.1-9. As in the case of the design specifications, this is a minimum list and the user may add more information up to a maximum of 20 parameters.

2.1.6.4 Particulate Bioassay Data

The results of biological analysis of the collected particulate sample are given in the FPEIS using standard nomenclature for BIOASSAY TEST TYPE. The allowed data for this data element are given in Table 2.1-10.

2.1.6.5 Particulate Chemical Composition

At present, none of the chemical analyses techniques are in situ and real-time. Generally, airborne particulates are collected by means of an inertial device such as cascade impactor and chemical analyses are performed on the material collected on each stage. The FPEIS data base provides space for entry of results of chemical analyses on collected particulate, if such data are available.

In order to identify the chemical species present in the sample, the FPEIS uses the identification codes developed for the SAROAD system. The name of each chemical compound or element in the SAROAD system and its identification code are given in Table 2.1-11. Only these data may be used.

While the input protocol requires that the numeric code be encoded, the FPEIS Standard Report Output will give the name of the chemical species found (see Section 6.4).

At present, 22 general types of chemical analysis methods have been identified for the FPEIS. A standard one-letter alphabetic code will be used to identify the chemical analysis method used. The allowed data are given in Table 2.1-12.

As in the case with the SAROAD identification codes, the FPEIS Standard Report Output will give the complete name of the analysis method and not the alphabetic code.

2.1.6.6 Measurement Particulars

The identification of the particulate measurement instrument or method name requires the use of standard nomenclature if effective sorting or retrieval of particle size distribution data are to be accomplished. In Table 2.1-13, a list of standard names for measurement equipment is provided for seven classes of equipment. Use only the data provide. Any additional commentary may be given in the COMMENTS ON THE MEASUREMENT on the data form.

2.1.6.7 Engineering Units

As stated previously, the FPEIS uses metric units exclusively. While every attempt has been made to use SI (International System of Units) protocol whenever possible, some data elements are expressed in the metric equivalent of a more common English unit. The specific required units for each data element is given in Section 2.3. This is consistent with EPA policy regarding the use of metric units.

2.1.7 Data Preparation

The FPEIS data as coded on the input forms shown in the Appendix (Section 6.3) require some processing before they can be stored in the data base. This is necessary in order to re-format the data into SYSTEM 2000 loader protocol.

Two computer programs, one in FORTRAN and one in COBOL, have been developed to prepare the data for entry to SYSTEM 2000. The general procedure is as follows:

Step	Process
1	Filling missing cards with blank cards (Program 1)
2	Duplicate necessary information (Program 1)
3	Pre-edit: a. Check for card order (Program 1) b. Calculation for particle size distributions (Program 1) c. Quality assurance check (Program 1)
4	Encode revised deck on magnetic tape
5	Final edit and re-check data fields and load into data base (Program 2)

In Step 1, the missing cards, i.e., cards not completed at the time of encoding, will be replaced by blank cards within the data set. In Step 2, wherever there is a need for duplicating information such as the sampling location description or the measurement equipment description, it will be duplicated by the EDIT program (Program 1). The editing process in Step 3 involves complete calculation of size distribution and total mass and surface number concentrations.

If the total mass concentration is not within the range of 10^2 to 10^8 g/m^3 or if the number concentration is not within the range of 10^2 to 10^{10} particles/cm^3, a keypunching or encoding error is suspected. If all data appear to be within tolerances set by the EDIT program during the pre-edit phase, the data are copied to magnetic tape. After quality assurance procedures have been completed, the data are entered into the FPEIS using the LOADER program. The administrative procedures for submitting new data are discussed in detail in Section 3.1

2.1.8 Tables of Standard Nomenclature and Units

The following tables, discussed previously include the standard nomenclature to be used for the FPEIS data base.

TABLE 2.1-3. DATA ELEMENTS REQUIRING STANDARD NOMENCLATURE

Source Description:

Source category
Type of operation
Feed material class
Operating mode class
State

Control Device Characteristics and Design Parameters:

Device category
Device class
Generic device type
Design specification type

Test Characteristics and Control Device Operating Parameters:

Sampling location
Typical operating parameter type

Particulate Bioassay Data:

Bioassay test type

Particulate Chemical Composition:

SAROAD chemical ID
Analysis method

Measurement Particulars:

Measurement instrument/method name

TABLE 2.1-4. SOURCE CLASSIFICATION CODES

Column I - Source Category

Column II - Type of Operation

Column III - Feed Material Class

Column IV - Operating Mode Class

TABLE 2.1-4.

NATIONAL EMISSIONS DATA SYSTEM (NEDS)
SOURCE CLASSIFICATION CODE (SCC) REPORT

```
                              SCC CATEGORY NAMES
                              ******************
        I                 II                 III                  IV                    UNITS

EXTCOMB BOILER    |ELECTRIC GENERATN|ANTHRACITE COAL  |>100MMBTU PULVIZD|TONS BURNED
EXTCOMB BOILER    |ELECTRIC GENERATN|ANTHRACITE COAL  |>100MMBTU STOKERS|TONS BURNED
EXTCOMB BOILER    |ELECTRIC GENERATN|ANTHRACITE COAL  |10-100MMBTU PULVD|TONS BURNED
EXTCOMB BOILER    |ELECTRIC GENERATN|ANTHRACITE COAL  |10-100MMBTU STOKR|TONS BURNED
EXTCOMB BOILER    |ELECTRIC GENERATN|ANTHRACITE COAL  |<10MMBTU PULVIZED|TONS BURNED
EXTCOMB BOILER    |ELECTRIC GENERATN|ANTHRACITE COAL  |<10MMBTU STOKER  |TONS BURNED
EXTCOMB BOILER    |ELECTRIC GENERATN|ANTHRACITE COAL  |OTHER/NOT CLASIFD|TONS BURNED
EXTCOMB BOILER    |ELECTRIC GENERATN|BITUMINOUS COAL  |>100MMBTU PULVWET|TONS BURNED
EXTCOMB BOILER    |ELECTRIC GENERATN|BITUMINOUS COAL  |>100MMBTU PULVDRY|TONS BURNED
EXTCOMB BOILER    |ELECTRIC GENERATN|BITUMINOUS COAL  |>100MMBTU CYCLONE|TONS BURNED
EXTCOMB BOILER    |ELECTRIC GENERATN|BITUMINOUS COAL  |>100MMBTU SPDSTKR|TONS BURNED
EXTCOMB BOILER    |ELECTRIC GENERATN|BITUMINOUS COAL  |>100MMBTU/HR UFSK|TONS BURNED
EXTCOMB BOILER    |ELECTRIC GENERATN|BITUMINOUS COAL  |10-100MMBTU PULWT|TONS BURNED
EXTCOMB BOILER    |ELECTRIC GENERATN|BITUMINOUS COAL  |10-100MMBTU PULDY|TONS BURNED
EXTCOMB BOILER    |ELECTRIC GENERATN|BITUMINOUS COAL  |10-100MMBTU OFSTK|TONS BURNED
EXTCOMB BOILER    |ELECTRIC GENERATN|BITUMINOUS COAL  |10-100MMBTU UFSTK|TONS BURNED
EXTCOMB BOILER    |ELECTRIC GENERATN|BITUMINOUS COAL  |<10MMBTU OFSTOKER|TONS BURNED
EXTCOMB BOILER    |ELECTRIC GENERATN|BITUMINOUS COAL  |<10MMBTU UFSTOKER|TONS BURNED
EXTCOMB BOILER    |ELECTRIC GENERATN|BITUMINOUS COAL  |<10MMBTU PULV-DRY|TONS BURNED
EXTCOMB BOILER    |ELECTRIC GENERATN|BITUMINOUS COAL  |OTHER/NOT CLASIFD|TONS BURNED
EXTCOMB BOILER    |ELECTRIC GENERATN|LIGNITE          |>100MMBTU PULVWET|TONS BURNED
EXTCOMB BOILER    |ELECTRIC GENERATN|LIGNITE          |>100MMBTU PULVDRY|TONS BURNED
EXTCOMB BOILER    |ELECTRIC GENERATN|LIGNITE          |>100MMBTU CYCLONE|TONS BURNED
EXTCOMB BOILER    |ELECTRIC GENERATN|LIGNITE          |>100MMBTU OF STKR|TONS BURNED
EXTCOMB BOILER    |ELECTRIC GENERATN|LIGNITE          |>100MMBTU UF STKR|TONS BURNED
EXTCOMB BOILER    |ELECTRIC GENERATN|LIGNITE          |>100MMBTU SPDSTKR|TONS BURNED
EXTCOMB BOILER    |ELECTRIC GENERATN|LIGNITE          |10-100MMBTU DYPUL|TONS BURNED
EXTCOMB BOILER    |ELECTRIC GENERATN|LIGNITE          |10-100MMBTU WTPUL|TONS BURNED
EXTCOMB BOILER    |ELECTRIC GENERATN|LIGNITE          |10-100MMBTU OFSTK|TONS BURNED
EXTCOMB BOILER    |ELECTRIC GENERATN|LIGNITE          |10-100MMBTU UFSTK|TONS-BURNED
EXTCOMB BOILER    |ELECTRIC GENERATN|LIGNITE          |10-100MMBTUSPDSTK|TONS BURNED
EXTCOMB BOILER    |ELECTRIC GENERATN|LIGNITE          |<10MMBTU PULV DRY|TONS BURNED
EXTCOMB BOILER    |ELECTRIC GENERATN|LIGNITE          |<10MMBTU OF STOKR|TONS BURNED
EXTCOMB BOILER    |ELECTRIC GENERATN|LIGNITE          |<10MMBTU UF STOKR|TONS BURNED
EXTCOMB BOILER    |ELECTRIC GENERATN|LIGNITE          |<10MMBTU SPDSTOKR|TONS BURNED
EXTCOMB BOILER    |ELECTRIC GENERATN|RESIDUAL OIL     |>100MMBTU/HR GENL|1000GALLONS BURNED
EXTCOMB BOILER    |ELECTRIC GENERATN|RESIDUAL OIL     |10-100MMBTU/HRGNL|1000GALLONS BURNED
EXTCOMB BOILER    |ELECTRIC GENERATN|RESIDUAL OIL     |<10MMBTU/HR GENL |1000GALLONS BURNED
EXTCOMB BOILER    |ELECTRIC GENERATN|DISTILLATE OIL   |>100MMBTU/HR GENL|1000GALLONS BURNED
EXTCOMB BOILER    |ELECTRIC GENERATN|DISTILLATE OIL   |10-100MMBTU/HRGNL|1000GALLONS BURNED
EXTCOMB BOILER    |ELECTRIC GENERATN|DISTILLATE OIL   |<10MMBTU/HR GENL |1000GALLONS BURNED
EXTCOMB BOILER    |ELECTRIC GENERATN|NATURAL GAS      |>100MMBTU/HR     |MILLION CUBIC FEET BURNED
EXTCOMB BOILER    |ELECTRIC GENERATN|NATURAL GAS      |10-100MMBTU/HR   |MILLION CUBIC FEET BURNED
EXTCOMB BOILER    |ELECTRIC GENERATN|NATURAL GAS      |<10MMBTU/HR      |MILLION CUBIC FEET BURNED
EXTCOMB BOILER    |ELECTRIC GENERATN|PROCESS GAS      |>100MMBTU/HR     |MILLION CUBIC FEET BURNED
EXTCOMB BOILER    |ELECTRIC GENERATN|PROCESS GAS      |10-100MMBTU/HR   |MILLION CUBIC FEET BURNED
EXTCOMB BOILER    |ELECTRIC GENERATN|PROCESS GAS      |<10MMBTU/HR      |MILLION CUBIC FEET BURNED
EXTCOMB BOILER    |ELECTRIC GENERATN|COKE             |>100MMBTU/HR     |TONS BURNED
EXTCOMB BOILER    |ELECTRIC GENERATN|BAGASSE          |10-100MMBTU/HR   |TONS BURNED
EXTCOMB BOILER    |ELECTRIC GENERATN|BAGASSE          |<10MMBTU/HR      |TONS BURNED

EXTCOMB BOILER    |ELECTRIC GENERATN|SOLID WASTE/COAL |>100MMBTU/HR     |TONS BURNED
EXTCOMB BOILER    |ELECTRIC GENERATN|SOLID WASTE/COAL |10-100MMBTU/HR   |TONS BURNED
EXTCOMB BOILER    |ELECTRIC GENERATN|SOLID WASTE/COAL |<10MMBTU/HR      |TONS BURNED
EXTCOMB BOILER    |ELECTRIC GENERATN|OTHER/NOT CLASIFD|SPECIFY IN REMARK|MILLION CUBIC FEET BURNED
EXTCOMB BOILER    |ELECTRIC GENERATN|OTHER/NOT CLASIFD|SPECIFY IN REMARK|1000 GALLON (LIQUID) BURNED
EXTCOMB BOILER    |ELECTRIC GENERATN|OTHER NOT CLASIFD|SPECIFY IN REMARK|TONS BURNED (SOLID)
EXTCOMB BOILER    |INDUSTRIAL       |ANTHRACITE COAL  |>100MMBTU/HR PULV|TONS BURNED
EXTCOMB BOILER    |INDUSTRIAL       |ANTHRACITE COAL  |>100MMBTU/HR STKR|TONS BURNED
EXTCOMB BOILER    |INDUSTRIAL       |ANTHRACITE COAL  |10-100MMBTU PULVD|TONS BURNED
EXTCOMB BOILER    |INDUSTRIAL       |ANTHRACITE COAL  |10-100MMBTU STKR |TONS BURNED
EXTCOMB BOILER    |INDUSTRIAL       |ANTHRACITE COAL  |<10MMBTU/HR PULVD|TONS BURNED
EXTCOMB BOILER    |INDUSTRIAL       |ANTHRACITE COAL  |<10MMBTU/HR STKR |TONS BURNED
EXTCOMB BOILER    |INDUSTRIAL       |ANTHRACITE COAL  |<10MMBTU/HR HNDFR|TONS BURNED
EXTCOMB BOILER    |INDUSTRIAL       |ANTHRACITE COAL  |OTHER/NOT CLASIFD|TONS BURNED
EXTCOMB BOILER    |INDUSTRIAL       |BITUMINOUS COAL  |>100MMBTU PULVWET|TONS BURNED
EXTCOMB BOILER    |INDUSTRIAL       |BITUMINOUS COAL  |>100MMBTU PULVDRY|TONS BURNED
EXTCOMB BOILER    |INDUSTRIAL       |BITUMINOUS COAL  |>100MMBTU CYCLONE|TONS BURNED
EXTCOMB BOILER    |INDUSTRIAL       |BITUMINOUS COAL  |>100MMBTU SPDSTKR|TONS BURNED
EXTCOMB BOILER    |INDUSTRIAL       |BITUMINOUS COAL  |10-100MMBTU OFSTK|TONS BURNED
EXTCOMB BOILER    |INDUSTRIAL       |BITUMINOUS COAL  |10-100MMBTU UFSTK|TONS BURNED
EXTCOMB BOILER    |INDUSTRIAL       |BITUMINOUS COAL  |10-100MMBTU PULWT|TONS BURNED
EXTCOMB BOILER    |INDUSTRIAL       |BITUMINOUS COAL  |10-100MMBTU PULDY|TONS BURNED
EXTCOMB BOILER    |INDUSTRIAL       |BITUMINOUS COAL  |10-100MMBTUSPDSTK|TONS BURNED
EXTCOMB BOILER    |INDUSTRIAL       |BITUMINOUS COAL  |<10MMBTU OFD STKR|TONS BURNED
EXTCOMB BOILER    |INDUSTRIAL       |BITUMINOUS COAL  |<10MMBTU UFD STKR|TONS BURNED
EXTCOMB BOILER    |INDUSTRIAL       |BITUMINOUS COAL  |<10MMBTU PULV DRY|TONS BURNED
EXTCOMB BOILER    |INDUSTRIAL       |BITUMINOUS COAL  |<10MMBTU SPD STKR|TONS BURNED
EXTCOMB BOILER    |INDUSTRIAL       |BITUMINOUS COAL  |<10MMBTU HANDFIRE|TONS BURNED
EXTCOMB BOILER    |INDUSTRIAL       |BITUMINOUS COAL  |OTHER/NOT CLASIFD|TONS BURNED
EXTCOMB BOILER    |INDUSTRIAL       |LIGNITE          |>100MMBTU PULVWET|TONS BURNED
EXTCOMB BOILER    |INDUSTRIAL       |LIGNITE          |>100MMBTU PULVDRY|TONS BURNED
EXTCOMB BOILER    |INDUSTRIAL       |LIGNITE          |>100MMBTU CYCLONE|TONS BURNED
EXTCOMB BOILER    |INDUSTRIAL       |LIGNITE          |>100MMBTU OFSTKR |TONS BURNED
EXTCOMB BOILER    |INDUSTRIAL       |LIGNITE          |>100MMBTU UFSTKR |TONS BURNED
EXTCOMB BOILER    |INDUSTRIAL       |LIGNITE          |>100MMBTU SPDSTKR|TONS BURNED
EXTCOMB BOILER    |INDUSTRIAL       |LIGNITE          |10-100MMBTU DYPUL|TONS BURNED
EXTCOMB BOILER    |INDUSTRIAL       |LIGNITE          |10-100MMBTU WTPUL|TONS BURNED
EXTCOMB BOILER    |INDUSTRIAL       |LIGNITE          |10-100MMBTU OFSTK|TONS BURNED
EXTCOMB BOILER    |INDUSTRIAL       |LIGNITE          |10-100MMBTU UFSTK|TONS BURNED
EXTCOMB BOILER    |INDUSTRIAL       |LIGNITE          |10-100MMBTUSPDSTK|TONS BURNED
EXTCOMB BOILER    |INDUSTRIAL       |LIGNITE          |<10MMBTU PULV DRY|TONS BURNED
EXTCOMB BOILER    |INDUSTRIAL       |LIGNITE          |<10MMBTU OFSTOKR |TONS BURNED
EXTCOMB BOILER    |INDUSTRIAL       |LIGNITE          |<10MMBTU UFSTOKR |TONS BURNED
EXTCOMB BOILER    |INDUSTRIAL       |LIGNITE          |<10MMBTU HANDFIRE|TONS BURNED
EXTCOMB BOILER    |INDUSTRIAL       |LIGNITE          |<10MMBTU SPDSTKR |TONS BURNED
EXTCOMB BOILER    |INDUSTRIAL       |RESIDUAL OIL     |>100MMBTU/HR     |1000 GALLONS BURNED
EXTCOMB BOILER    |INDUSTRIAL       |RESIDUAL OIL     |10-100MMBTU/HR   |1000 GALLONS BURNED
EXTCOMB BOILER    |INDUSTRIAL       |RESIDUAL OIL     |<10MMBTU/HR      |1000 GALLONS BURNED
EXTCOMB BOILER    |INDUSTRIAL       |DISTILLATE OIL   |>100MMBTU/HR     |1000 GALLONS BURNED
EXTCOMB BOILER    |INDUSTRIAL       |DISTILLATE OIL   |10-100MMBTU/HR   |1000 GALLONS BURNED
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TABLE 2.1-4. (Continued)

NATIONAL EMISSIONS DATA SYSTEM (NEDS)
SOURCE CLASSIFICATION CODE (SCC) REPORT

SCC CATEGORY NAMES

I	II	III	IV	UNITS
EXTCOMB BOILER	INDUSTRIAL	DISTILLATE OIL	<10MMBTU/HR	1000 GALLONS BURNED
EXTCOMB BOILER	INDUSTRIAL	NATURAL GAS	>100MMBTU/HR	MILLION CUBIC FEET BURNED
EXTCOMB BOILER	INDUSTRIAL	NATURAL GAS	10-100MMBTU/HR	MILLION CUBIC FEET BURNED
EXTCOMB BOILER	INDUSTRIAL	NATURAL GAS	<10MMBTU/HR	MILLION CUBIC FEET BURNED
EXTCOMB BOILER	INDUSTRIAL	PROCESS GAS	>100MMBTU/HR	MILLION CUBIC FEET BURNED
EXTCOMB BOILER	INDUSTRIAL	PROCESS GAS	10-100MMBTU/HR	MILLION CUBIC FEET BURNED
EXTCOMB BOILER	INDUSTRIAL	PROCESS GAS	<10MMBTU/HR	MILLION CUBIC FEET BURNED
EXTCOMB BOILER	INDUSTRIAL	COKE	10-100MMBTU/HR	TONS BURNED
EXTCOMB BOILER	INDUSTRIAL	COKE	<10MMBTU/HR	TONS BURNED
EXTCOMB BOILER	INDUSTRIAL	WOOD	WOOD WASTE BOILER	TONS BURNED
EXTCOMB BOILER	INDUSTRIAL	WOOD	SMALL HANDFIRE	TONS BURNED
EXTCOMB BOILER	INDUSTRIAL	LIQ PETROLEUM GAS	10-100MMBTU/HR	1000GALLONS BURNED
EXTCOMB BOILER	INDUSTRIAL	LIQ PETROLEUM GAS	<10MMBTU/HR	1000GALLONS BURNED
EXTCOMB BOILER	INDUSTRIAL	BAGASSE	10-100MMBTU/HR	TONS BURNED
EXTCOMB BOILER	INDUSTRIAL	BAGASSE	<10MMBTU/HR	TONS BURNED
EXTCOMB BOILER	INDUSTRIAL	OTHER/NOT CLASIFD	SPECIFY IN REMARK	MILLION CUBIC FEET BURNED
EXTCOMB BOILER	INDUSTRIAL	OTHER/NOT CLASIFD	SPECIFY IN REMARK	1000 GALLON BURNED (LIQUID)
EXTCOMB BOILER	INDUSTRIAL	OTHER NOT CLASIFD	SPECIFY IN REMARK	TONS BURNED (SOLID)
EXTCOMB BOILER	COMMERCL-INSTUTNL	ANTHRACITE COAL	10-100MMBTU PULWT	TONS BURNED
EXTCOMB BOILER	COMMERCL-INSTUTNL	ANTHRACITE COAL	10-100MMBTU PULDY	TONS BURNED
EXTCOMB BOILER	COMMERCL-INSTUTNL	ANTHRACITE COAL	10-100MMBTUSPOSTK	TONS BURNED
EXTCOMB BOILER	COMMERCL-INSTUTNL	ANTHRACITE COAL	<10MMBTU PULVIZED	TONS BURNED
EXTCOMB BOILER	COMMERCL-INSTUTNL	ANTHRACITE COAL	<10MMBTU STOKER	TONS BURNED
EXTCOMB BOILER	COMMERCL-INSTUTNL	ANTHRACITE COAL	<10MMBTU SPOSTOKR	TONS BURNED
EXTCOMB BOILER	COMMERCL-INSTUTNL	ANTHRACITE COAL	OTHER/NOT CLASIFD	TONS BURNED
EXTCOMB BOILER	COMMERCL-INSTUTNL	BITUMINOUS COAL	10-100MMBTU PULWT	TONS BURNED
EXTCOMB BOILER	COMMERCL-INSTUTNL	BITUMINOUS COAL	10-100MMBTU PULDY	TONS BURNED
EXTCOMB BOILER	COMMERCL-INSTUTNL	BITUMINOUS COAL	10-100MMBTU OFSTK	TONS BURNED
EXTCOMB BOILER	COMMERCL-INSTUTNL	BITUMINOUS COAL	10-100MMBTU UFSTK	TONS BURNED
EXTCOMB BOILER	COMMERCL-INSTUTNL	BITUMINOUS COAL	10-100MMBTUSPOSTK	TONS BURNED
EXTCOMB BOILER	COMMERCL-INSTUTNL	BITUMINOUS COAL	10-100MMBTU HANFR	TONS BURNED
EXTCOMB BOILER	COMMERCL-INSTUTNL	BITUMINOUS COAL	<10MMBTU OFSTOKER	TONS BURNED
EXTCOMB BOILER	COMMERCL-INSTUTNL	BITUMINOUS COAL	<10MMBTU UFSTOKER	TONS BURNED
EXTCOMB BOILER	COMMERCL-INSTUTNL	BITUMINOUS COAL	<10MMBTU SPOSTOKR	TONS BURNED
EXTCOMB BOILER	COMMERCL-INSTUTNL	BITUMINOUS COAL	<10MMBTU HANDFIRE	TONS BURNED
EXTCOMB BOILER	COMMERCL-INSTUTNL	BITUMINOUS COAL	OTHER/NOT CLASIFD	TONS BURNED
EXTCOMB BOILER	COMMERCL-INSTUTNL	LIGNITE	10-100MMBTU PULWT	TONS BURNED
EXTCOMB BOILER	COMMERCL-INSTUTNL	LIGNITE	10-100MMBTU PULDY	TONS BURNED
EXTCOMB BOILER	COMMERCL-INSTUTNL	LIGNITE	10-100MMBTU OFSTK	TONS BURNED
EXTCOMB BOILER	COMMERCL-INSTUTNL	LIGNITE	10-100MMBTU UFSTK	TONS BURNED
EXTCOMB BOILER	COMMERCL-INSTUTNL	LIGNITE	10-100MMBTUSPOSTK	TONS BURNED
EXTCOMB BOILER	COMMERCL-INSTUTNL	LIGNITE	<10MMBTU PULV-DRY	TONS BURNED
EXTCOMB BOILER	COMMERCL-INSTUTNL	LIGNITE	<10MMBTU OFSTOKER	TONS BURNED
EXTCOMB BOILER	COMMERCL-INSTUTNL	LIGNITE	<10MMBTU UFSTOKER	TONS BURNED
EXTCOMB BOILER	COMMERCL-INSTUTNL	LIGNITE	<10MMBTU SPOSTOKR	TONS BURNED
EXTCOMB BOILER	COMMERCL-INSTUTNL	LIGNITE	<10MMBTU HANDFIRE	TONS BURNED
EXTCOMB BOILER	COMMERCL-INSTUTNL	RESIDUAL OIL	>100MMBTU/HR	1000 GALLONS BURNED
EXTCOMB BOILER	COMMERCL-INSTUTNL	RESIDUAL OIL	10-100MMBTU/HR	1000 GALLONS BURNED
EXTCOMB BOILER	COMMERCL-INSTUTNL	RESIDUAL OIL	<10MMBTU/HR	1000 GALLONS BURNED
EXTCOMB BOILER	COMMERCL-INSTUTNL	DISTILLATE	>100MMBTU/HR	1000 GALLONS BURNED
EXTCOMB BOILER	COMMERCL-INSTUTNL	DISTILLATE	10-100MMBTU/HR	1000 GALLONS BURNED
EXTCOMB BOILER	COMMERCL-INSTUTNL	DISTILLATE	<10MMBTU/HR	1000 GALLONS BURNED
EXTCOMB BOILER	COMMERCL-INSTUTNL	NATURAL GAS	>100MMBTU/HR	MILLION CUBIC FEET BURNED
EXTCOMB BOILER	COMMERCL-INSTUTNL	NATURAL GAS	10-100MMBTU/HR	MILLION CUBIC FEET BURNED
EXTCOMB BOILER	COMMERCL-INSTUTNL	NATURAL GAS	<10MMBTU/HR	MILLION CUBIC FEET BURNED
EXTCOMB BOILER	COMMERCL-INSTUTNL	WOOD	<10MMBTU/HR	TONS BURNED
EXTCOMB BOILER	COMMERCL-INSTUTNL	LIQ PETROLEUM GAS	10-100MMBTU/HR	1000 GALLONS BURNED
EXTCOMB BOILER	COMMERCL-INSTUTNL	LIQ PETROLEUM GAS	<10MMBTU/HR	1000 GALLONS BURNED
EXTCOMB BOILER	COMMERCL-INSTUTNL	OTHER/NOT CLASIFD	SPECIFY IN REMARK	MILLION CUBIC FEET BURNED
EXTCOMB BOILER	COMMERCL-INSTUTNL	OTHER/NOT CLASIFD	SPECIFY IN REMARK	1000 GALLON BURNED (LIQUID)
EXTCOMB BOILER	COMMERCL-INSTUTNL	OTHER/NOT CLASIFD	SPECIFY IN REMARK	TONS BURNED (SOLID)
INTERNLCOMBUSTION	ELECTRIC GENERATN	DISTILLATE OIL	TURBINE	1000 GALLONS BURNED
INTERNLCOMBUSTION	ELECTRIC GENERATN	NATURAL GAS	TURBINE	MILLION CUBIC FEET
INTERNLCOMBUSTION	ELECTRIC GENERATN	DIESEL	RECIPROCATING	THOUSANDS OF GALLONS
INTERNLCOMBUSTION	ELECTRIC GENERATN	OTHER/NOT CLASIFD	SPECIFY IN REMARK	MILLION CUBIC FEET BURNED
INTERNLCOMBUSTION	ELECTRIC GENERATN	OTHER/NOT CLASIFD	SPECIFY IN REMARK	1000 GALLONS BURNED
INTERNLCOMBUSTION	INDUSTRIAL	DISTILLATE OIL	TURBINE	1000 GALLONS BURNED
INTERNLCOMBUSTION	INDUSTRIAL	DISTILLATE OIL	RECIPROCATING	1000 GALLONS BURNED
INTERNLCOMBUSTION	INDUSTRIAL	NATURAL GAS	TURBINE	MILLION CUBIC FEET
INTERNLCOMBUSTION	INDUSTRIAL	NATURAL GAS	RECIPROCATING	MILLION CUBIC FEET
INTERNLCOMBUSTION	INDUSTRIAL	GASOLINE	RECIPROCATING	1000 GALLONS BURNED
INTERNLCOMBUSTION	INDUSTRIAL	DIESEL FUEL	RECIPROCATING	1000 GALLONS BURNED
INTERNLCOMBUSTION	INDUSTRIAL	OTHER/NOT CLASIFD	SPECIFY IN REMARK	MILLION CUBIC FEET BURNED
INTERNLCOMBUSTION	INDUSTRIAL	OTHER/NOT CLASIFD	SPECIFY IN REMARK	1000 GALLONS BURNED
INTERNLCOMBUSTION	COMMERCL-INSTUTNL	DIESEL	RECIPROCATING	THOUSANDS OF GALLONS
INTERNLCOMBUSTION	COMMERCL-INSTUTNL	OTHER/NOT CLASIFD	SPECIFY IN REMARK	MILLION CUBIC FEET BURNED
INTERNLCOMBUSTION	COMMERCL-INSTUTNL	OTHER/NOT CLASIFD	SPECIFY IN REMARK	1000 GALLONS BURNED
INTERNLCOMBUSTION	ENGINE TESTING	AIRCRAFT	TURBOJET	THOUSANDS OF GALLON/FUEL
INDUSTRIAL PROCES	CHEMICAL MFG	ADIPIC ACID PROD	GENERAL-CYCLOHEX	TONS PRODUCED
INDUSTRIAL PROCES	CHEMICAL MFG	ADIPIC ACID PROD	OTHER/NOT CLASIFD	TONS PRODUCED
INDUSTRIAL PROCES	CHEMICAL MFG	AMMONIA W/METHNTR	PURGE GAS	TONS PRODUCED
INDUSTRIAL PROCES	CHEMICAL MFG	AMMONIA W/METHNTR	STORAGE/LOADING	TONS PRODUCED
INDUSTRIAL PROCES	CHEMICAL MFG	AMMONIA W/COABSRB	REGENERATOR EXIT	TONS PRODUCED
INDUSTRIAL PROCES	CHEMICAL MFG	AMMONIA W/COABSRB	PURGE GAS	TONS PRODUCED
INDUSTRIAL PROCES	CHEMICAL MFG	AMMONIA W/COABSRB	STORAGE/LOADING	TONS PRODUCED
INDUSTRIAL PROCES	CHEMICAL MFG	AMMONIA	OTHER/NOT CLASIFD	TONS PRODUCED
INDUSTRIAL PROCES	CHEMICAL MFG	AMMONIUM NITRATE	GENERAL	TONS PRODUCED
INDUSTRIAL PROCES	CHEMICAL MFG	AMMONIUM NITRATE	OTHER/NOT CLASIFD	TONS PRODUCED
INDUSTRIAL PROCES	CHEMICAL MFG	CARBON BLACK	CHANNEL PROCESS	TONS PRODUCED
INDUSTRIAL PROCES	CHEMICAL MFG	CARBON BLACK	THERMAL PROCESS	TONS PRODUCED
INDUSTRIAL PROCES	CHEMICAL MFG	CARBON BLACK	FURNACE PROC GAS	TONS PRODUCED
INDUSTRIAL PROCES	CHEMICAL MFG	CARBON BLACK	FURNACE PROC OIL	TONS PRODUCED
INDUSTRIAL PROCES	CHEMICAL MFG	CARBON BLACK	FURNACE W/GAS/OIL	TONS PRODUCED
INDUSTRIAL PROCES	CHEMICAL MFG	CARBON BLACK	OTHER/NOT CLASFD	TONS PRODUCT
INDUSTRIAL PROCES	CHEMICAL MFG	CHARCOAL MFG	PYROL/DISTIL/REML	TONS PRODUCED
INDUSTRIAL PROCES	CHEMICAL MFG	CHARCOAL MFG	OTHER/NOT CLASFD	TONS PRODUCT
INDUSTRIAL PROCES	CHEMICAL MFG	CHLORINE	GENERAL	TONS PRODUCED
INDUSTRIAL PROCES	CHEMICAL MFG	CHLORINE	OTHER/NOT CLASIFD	TONS PRODUCED
INDUSTRIAL PROCES	CHEMICAL MFG	CHLOR-ALKALI	LIQUIFTN-DIAPHRM	100 TONS CHLORINE LIQUEFIED
INDUSTRIAL PROCES	CHEMICAL MFG	CHLOR-ALKALI	LIQUIFTN-MERC CEL	100 TONS CHLORINE LIQUEFIED

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TABLE 2.1-4. (Continued)

NATIONAL EMISSIONS DATA SYSTEM (NEDS) SOURCE CLASSIFICATION CODE (SCC) REPORT

SCC CATEGORY NAMES

I	II	III	IV	UNITS
INDUSTRIAL PROCES	CHEMICAL MFG	CHLOR-ALKALI	LOADING TNKCARVNT	100 TONS CHLORINE LIQUEFIED
INDUSTRIAL PROCES	CHEMICAL MFG	CHLOR-ALKALI	LOADING STGTNKVNT	100 TONS CHLORINE LIQUEFIED
INDUSTRIAL PROCES	CHEMICAL MFG	CHLOR-ALKALI	AIR-BLOW MC BRINE	100 TONS CHLORINE LIQUEFIED
INDUSTRIAL PROCES	CHEMICAL MFG	CHLOR-ALKALI	OTHER/NOT CLASIFD	100 TONS CHLORINE LIQUEFIED
INDUSTRIAL PROCES	CHEMICAL MFG	CLEANING CHEMICLS	SOAP/DET SPRYDRYR	TONS PRODUCED
INDUSTRIAL PROCES	CHEMICAL MFG	CLEANING CHEMICLS	SPECIALTY CLEANRS	TONS PRODUCT
INDUSTRIAL PROCES	CHEMICAL MFG	CLEANING CHEMICLS	OTHERS/NOT CLASFD	TONS PRODUCED
INDUSTRIAL PROCES	CHEMICAL MFG	EXPLOSIVES-TNT	NITRATION REACTRS	TONS PRODUCED
INDUSTRIAL PROCES	CHEMICAL MFG	EXPLOSIVES-TNT	HNO3 CONCTRTRS	TONS PRODUCED
INDUSTRIAL PROCES	CHEMICAL MFG	EXPLOSIVES-TNT	H2SO4 REGENERATR	TONS PRODUCED
INDUSTRIAL PROCES	CHEMICAL MFG	EXPLOSIVES-TNT	RED WATER INCIN	TONS PRODUCED
INDUSTRIAL PROCES	CHEMICAL MFG	EXPLOSIVES-TNT	OPEN WASTE BURN	TONS BURNED
INDUSTRIAL PROCES	CHEMICAL MFG	EXPLOSIVES	OTHER/NOT CLASIFD	TONS PRODUCED
INDUSTRIAL PROCES	CHEMICAL MFG	HYDROCHLORIC ACID	BYPRODUCTW/OSCRUB	TONS FINAL ACID
INDUSTRIAL PROCES	CHEMICAL MFG	HYDROCHLORIC ACID	BYPRODUCT W/SCRUB	TONS FINAL ACID
INDUSTRIAL PROCES	CHEMICAL MFG	HYDROCHLORIC ACID	OTHER/NOT CLASIFD	TONS FINAL ACID
INDUSTRIAL PROCES	CHEMICAL MFG	HYDROFLUORIC ACID	ROTRYKILNW/SCRUBR	TONS ACID
INDUSTRIAL PROCES	CHEMICAL MFG	HYDROFLUORIC ACID	ROTRYKILNW/OSCRUB	TONS ACID
INDUSTRIAL PROCES	CHEMICAL MFG	HYDROFLUORIC ACID	GRIND/DRY FLUOSPR	TONS FLUORSPAR
INDUSTRIAL PROCES	CHEMICAL MFG	HYDROFLUORIC ACID	OTHER/NOT CLASIFD	TONS ACID
INDUSTRIAL PROCES	CHEMICAL MFG	NITRIC ACID	AMMONIAOXIDATNOLD	TONS PURE ACID PRODUCED
INDUSTRIAL PROCES	CHEMICAL MFG	NITRIC ACID	AMMONIAOXIDATNNEW	TONS PURE ACID PRODUCED
INDUSTRIAL PROCES	CHEMICAL MFG	NITRIC ACID	NITACD CONCTR OLD	TONS PURE ACID PRODUCED
INDUSTRIAL PROCES	CHEMICAL MFG	NITRIC ACID	NITACD CONCTR NEW	TONS PURE ACID PRODUCED
INDUSTRIAL PROCES	CHEMICAL MFG	NITRIC ACID-WEAK	UNCONTROLLED	TONS PURE ACID PRODUCED
INDUSTRIAL PROCES	CHEMICAL MFG	NITRIC ACID-WEAK	W/CATYL/COMBUSTER	TONS PURE ACID PRODUCED
INDUSTRIAL PROCES	CHEMICAL MFG	NITRIC ACID-STRNG	UNCONTROLLED	TONS PURE ACID PRODUCED
INDUSTRIAL PROCES	CHEMICAL MFG	NITRIC ACID-STRNG	W/ABSORBERS	TONS PURE ACID PRODUCED
INDUSTRIAL PROCES	CHEMICAL MFG	NITRIC ACID	OTHER/NOT CLASIFD	TONS PURE ACID PRODUCED
INDUSTRIAL PROCES	CHEMICAL MFG	PAINT MFG	GENERAL	TONS PRODUCED
INDUSTRIAL PROCES	CHEMICAL MFG	PAINT MFG	PIGMENT KILN	TONS PRODUCT
INDUSTRIAL PROCES	CHEMICAL MFG	PAINT MFG	OTHER/NOT CLASFD	TONS PRODUCT
INDUSTRIAL PROCES	CHEMICAL MFG	VARNISH MFG	BODYING OIL GENL	TONS PRODUCED
INDUSTRIAL PROCES	CHEMICAL MFG	VARNISH MFG	OLEORESINOUS GENL	TONS PRODUCED
INDUSTRIAL PROCES	CHEMICAL MFG	VARNISH MFG	ALKYD GENERAL	TONS PRODUCED
INDUSTRIAL PROCES	CHEMICAL MFG	VARNISH MFG	ACRYLIC GENERAL	TONS PRODUCED
INDUSTRIAL PROCES	CHEMICAL MFG	VARNISH MFG	OTHER/NOT CLASFD	TONS PRODUCED
INDUSTRIAL PROCES	CHEMICAL MFG	PHOS-ACID WETPROC	REACTOR-UNCONTLD	TONS PHOSPHATE ROCK
INDUSTRIAL PROCES	CHEMICAL MFG	PHOS-ACID WETPROC	GYPSUM POND	TONS PHOSPHATE ROCK
INDUSTRIAL PROCES	CHEMICAL MFG	PHOS-ACID WETPROC	CONDENSR-UNCONTLD	TONS PHOSPHATE ROCK
INDUSTRIAL PROCES	CHEMICAL MFG	PHOS-ACID WETPROC	OTHER/NOT CLASFD	TONS PRODUCED
INDUSTRIAL PROCES	CHEMICAL MFG	PHOS-ACID THERMAL	GENERAL	TONS PHOSPHOROUS BURNED
INDUSTRIAL PROCES	CHEMICAL MFG	PHOS-ACID THERMAL	OTHER/NOT CLASFD	TONS PRODUCED
INDUSTRIAL PROCES	CHEMICAL MFG	PLASTICS	PVC-GENERAL	TONS PRODUCED
INDUSTRIAL PROCES	CHEMICAL MFG	PLASTICS	POLYPROP-GENERAL	TONS PRODUCED
INDUSTRIAL PROCES	CHEMICAL MFG	PLASTICS	BAKELITE-GENERAL	TONS PRODUCT
INDUSTRIAL PROCES	CHEMICAL MFG	PLASTICS	OTHER/NOT CLASFD	TONS PRODUCED
INDUSTRIAL PROCES	CHEMICAL MFG	PHTHALIC ANHYDRID	UNCONTROLLED-GENL	TONS PRODUCED
INDUSTRIAL PROCES	CHEMICAL MFG	PRINTING INK	COOKING-GENERAL	TONS PRODUCED
INDUSTRIAL PROCES	CHEMICAL MFG	PRINTING INK	COOKING-OILS	TONS PRODUCED
INDUSTRIAL PROCES	CHEMICAL MFG	PRINTING INK	COOKING-OLEORESIN	TONS PRODUCED
INDUSTRIAL PROCES	CHEMICAL MFG	PRINTING INK	COOKING-ALKYDS	TONS PRODUCED
INDUSTRIAL PROCES	CHEMICAL MFG	PRINTING INK	PIGMENT MIXINGGEN	TONS PIGMENT
INDUSTRIAL PROCES	CHEMICAL MFG	PRINTING INK	OTHER/NOT CLASFD	TONS PRODUCED
INDUSTRIAL PROCES	CHEMICAL MFG	SODIUM CARBONATE	AMMONIA RECOVERY	TONS PRODUCED
INDUSTRIAL PROCES	CHEMICAL MFG	SODIUM CARBONATE	HANDLING	TONS PRODUCED
INDUSTRIAL PROCES	CHEMICAL MFG	SODIUM CARBONATE	OTHER/NOT CLASFD	TONS PRODUCED
INDUSTRIAL PROCES	CHEMICAL MFG	H2SO4 -CHAMBER	GENERAL	TONS PURE ACID PRODUCED
INDUSTRIAL PROCES	CHEMICAL MFG	H2SO4-CONTACT	99.7 CONVERSION	TONS PURE ACID PRODUCED
INDUSTRIAL PROCES	CHEMICAL MFG	H2SO4-CONTACT	99.5 CONVERSION	TONS PURE ACID PRODUCED
INDUSTRIAL PROCES	CHEMICAL MFG	H2SO4-CONTACT	99.3 CONVERSION	TONS PURE ACID PRODUCED
INDUSTRIAL PROCES	CHEMICAL MFG	H2SO4-CONTACT	99.0 CONVERSION	TONS PURE ACID PRODUCED
INDUSTRIAL PROCES	CHEMICAL MFG	H2SO4-CONTACT	97.0 CONVERSION	TONS PURE ACID PRODUCED
INDUSTRIAL PROCES	CHEMICAL MFG	H2SO4-CONTACT	96.0 CONVERSION	TONS PURE ACID PRODUCED
INDUSTRIAL PROCES	CHEMICAL MFG	H2SO4-CONTACT	95.0 CONVERSION	TONS PURE ACID PRODUCED
INDUSTRIAL PROCES	CHEMICAL MFG	H2SO4-CONTACT	94.0 CONVERSION	TONS PURE ACID PRODUCED
INDUSTRIAL PROCES	CHEMICAL MFG	H2SO4-CONTACT	93.0 CONVERSION	TONS PURE ACID PRODUCED
INDUSTRIAL PROCES	CHEMICAL MFG	H2SO4-CONTACT	OTHER/NOT CLASFD	TONS PRODUCED
INDUSTRIAL PROCES	CHEMICAL MFG	SYNTHETIC FIBERS	NYLON GENERAL	TONS FIBER
INDUSTRIAL PROCES	CHEMICAL MFG	SYNTHETIC FIBERS	DACRON GENERAL	TONS FIBER
INDUSTRIAL PROCES	CHEMICAL MFG	SYNTHETIC FIBERS	ORLON	TONS PRODUCT
INDUSTRIAL PROCES	CHEMICAL MFG	SYNTHETIC FIBERS	ELASTIC	TONS PRODUCT
INDUSTRIAL PROCES	CHEMICAL MFG	SYNTHETIC FIBERS	TEFLON	TONS PRODUCT
INDUSTRIAL PROCES	CHEMICAL MFG	SYNTHETIC FIBERS	POLYESTER	TONS PRODUCT
INDUSTRIAL PROCES	CHEMICAL MFG	SYNTHETIC FIBERS	NOMEX	TONS PRODUCT
INDUSTRIAL PROCES	CHEMICAL MFG	SYNTHETIC FIBERS	ACRYLIC	TONS PRODUCT
INDUSTRIAL PROCES	CHEMICAL MFG	SYNTHETIC FIBERS	TYVEK	TONS PRODUCT
INDUSTRIAL PROCES	CHEMICAL MFG	SYNTHETIC FIBERS	OLEFINS	TONS PRODUCT
INDUSTRIAL PROCES	CHEMICAL MFG	SYNTHETIC FIBERS	OTHERS/NOT CLASFD	TONS PRODUCED
INDUSTRIAL PROCES	CHEMICAL MFG	SEMISYNTHTICFIBR	RAYON GENERAL	TONS FIBER
INDUSTRIAL PROCES	CHEMICAL MFG	SEMISYNTHTICFIBR	ACETATE	TONS PRODUCED
INDUSTRIAL PROCES	CHEMICAL MFG	SEMISYNTHETICFIBR	VISCOSE	TONS PRODUCED
INDUSTRIAL PROCES	CHEMICAL MFG	SEMISYNTHTICFIBR	OTHERS/NOT CLASFD	TONS PRODUCED
INDUSTRIAL PROCES	CHEMICAL MFG	SYNTHETIC RUBBER	BUTADIENE-GENERAL	TONS PRODUCT
INDUSTRIAL PROCES	CHEMICAL MFG	SYNTHETIC RUBBER	METHYLPROPENE-GNL	TONS PRODUCT
INDUSTRIAL PROCES	CHEMICAL MFG	SYNTHETIC RUBBER	BUTYNE GENERAL	TONS PRODUCT
INDUSTRIAL PROCES	CHEMICAL MFG	SYNTHETIC RUBBER	PENTADIENE-GENRL	TONS PRODUCT
INDUSTRIAL PROCES	CHEMICAL MFG	SYNTHETIC RUBBER	DIMETHHEPTNE GENL	TONS PRODUCT
INDUSTRIAL PROCES	CHEMICAL MFG	SYNTHETIC RUBBER	PENTANE-GENERAL	TONS PRODUCT
INDUSTRIAL PROCES	CHEMICAL MFG	SYNTHETIC RUBBER	ETHANENITRILE-GEN	TONS PRODUCT
INDUSTRIAL PROCES	CHEMICAL MFG	SYNTHETIC RUBBER	ACRYLONITRILE-GEN	TONS PRODUCT
INDUSTRIAL PROCES	CHEMICAL MFG	SYNTHETIC RUBBER	ACROLEIN-GENERAL	TONS PRODUCT
INDUSTRIAL PROCES	CHEMICAL MFG	SYNTHETIC RUBBER	AUTO TIRES GENERL	TONS PRODUCT
INDUSTRIAL PROCES	CHEMICAL MFG	SYNTHETIC RUBBER	OTHER/NOT CLASFD	TONS PRODUCT
INDUSTRIAL PROCES	CHEMICAL MFG	FERTILIZ AMONNITR	PRILTWR-NEUTRLIZR	TONS PRODUCED
INDUSTRIAL PROCES	CHEMICAL MFG	FERTILIZ AMONNITR	PRILLING TOWER	TONS PRODUCED
INDUSTRIAL PROCES	CHEMICAL MFG	FERTILIZ AMONNITR	PRILTWR-DRYCOOLRS	TONS PRODUCED
INDUSTRIAL PROCES	CHEMICAL MFG	FERTILIZ AMONNITR	GRANULAT-NEUTLIZR	TONS PRODUCED
INDUSTRIAL PROCES	CHEMICAL MFG	FERTILIZ AMONNITR	GRANULATOR	TONS PRODUCED
INDUSTRIAL PROCES	CHEMICAL MFG	FERTILIZ AMONNITR	GRANULAT-DRYCOLRS	TONS PRODUCED

TABLE 2.1-4. (Continued)

NATIONAL EMISSIONS DATA SYSTEM (NEDS)
SOURCE CLASSIFICATION CODE (SCC) REPORT

SCC CATEGORY NAMES

I	II	III	IV	UNITS
INDUSTRIAL PROCES	CHEMICAL MFG	FERTILIZ-NSUPPHOS	GRIND-DRY	TONS PRODUCED
INDUSTRIAL PROCES	CHEMICAL MFG	FERTILIZ-NSUPPHOS	MAIN STACK	TONS PRODUCED
INDUSTRIAL PROCES	CHEMICAL MFG	FERTILIZ-TRPSPHOS	RUN OF PILE	TONS PRODUCED
INDUSTRIAL PROCES	CHEMICAL MFG	FERTILIZ-TRPSPHOS	GRANULAR	TONS PRODUCED
INDUSTRIAL PROCES	CHEMICAL MFG	FERTILIZ-DIAMPHOS	DRYER-COOLERS	TONS PRODUCED
INDUSTRIAL PROCES	CHEMICAL MFG	FERTILIZ-DIAMPHOS	AMONIAT-GRANULATE	TONS PRODUCED
INDUSTRIAL PROCES	CHEMICAL MFG	FERTILIZER	OTHER/NOT CLASIFD	TONS PRODUCED
INDUSTRIAL PROCES	CHEMICAL MFG	TEREPTHALIC ACID	HNO3-PARAXYLENGEN	TONS PRODUCED
INDUSTRIAL PROCES	CHEMICAL MFG	TEREPTHALIC ACID	OTHER/NOT CLASIFD	TONS PRODUCED
INDUSTRIAL PROCES	CHEMICAL MFG	SULFUR(ELEMENTAL)	MOD-CLAUS 2STAGE	TONS PRODUCT
INDUSTRIAL PROCES	CHEMICAL MFG	SULFUR(ELEMENTAL)	MOD-CLAUS 3STAGE	TONS PRODUCT
INDUSTRIAL PROCES	CHEMICAL MFG	SULFUR(ELEMENTAL)	MOD-CLAUS 4STAGE	TONS PRODUCT
INDUSTRIAL PROCES	CHEMICAL MFG	SULFUR(ELEMENTAL)	OTHER/NOT CLASIFD	TONS PRODUCT
INDUSTRIAL PROCES	CHEMICAL MFG	PESTICIDES	MALATHION	GALLONS OF PRODUCT
INDUSTRIAL PROCES	CHEMICAL MFG	PESTICIDES	OTHER/NOT CLASIFD	TONS PRODUCED
INDUSTRIAL PROCES	CHEMICAL MFG	AMINES/AMIDES	GENERAL/OTHER	TONS PRODUCT
INDUSTRIAL PROCES	CHEMICAL MFG	PIGMENT-INORGAN	CALCINATION	TONS OF PRODUCT
INDUSTRIAL PROCES	CHEMICAL MFG	PIGMENT-INORGAN	OTHER/NOT CLASIFD	TONS OF PRODUCT
INDUSTRIAL PROCES	CHEMICAL MFG	SODIUM SULFATE	GENERAL/OTHER	TONS PRODUCT
INDUSTRIAL PROCES	CHEMICAL MFG	SODIUM SULFATE	KILNS	TONS PRODUCT
INDUSTRIAL PROCES	CHEMICAL MFG	SODIUM SULFITE	GENERAL/OTHER	TONS PRODUCT
INDUSTRIAL PROCES	CHEMICAL MFG	SODIUM SULFITE	KILNS	TONS PRODUCT
INDUSTRIAL PROCES	CHEMICAL MFG	SODIUM BICARB	GENERAL	TONS PRODUCT
INDUSTRIAL PROCES	CHEMICAL MFG	LITHIUM HYDROXIDE	GENERAL	TONS PRODUCT
INDUSTRIAL PROCES	CHEMICAL MFG	FERTILIZER UREA	GENERAL	TONS PRODUCT
INDUSTRIAL PROCES	CHEMICAL MFG	ADHESIVES	GENL/COMPND UNKWN	TONS PRODUCT
INDUSTRIAL PROCES	CHEMICAL MFG	ACETATE FLAKE	OTHER/NOT CLASFD	TONS PRODUCT
INDUSTRIAL PROCES	CHEMICAL MFG	ACETONE	OTHER/NOT CLASFD	TONS PRODUCT
INDUSTRIAL PROCES	CHEMICAL MFG	MALEIC ANHYDRIDE	GENERAL/OTHER	TONS PRODUCT
INDUSTRIAL PROCES	CHEMICAL MFG	POLVINL PYRILIDON	GENERAL/OTHER	TONS PRODUCT
INDUSTRIAL PROCES	CHEMICAL MFG	SULFONIC ACID/ATS	GENERAL/OTHER	TONS PRODUCT
INDUSTRIAL PROCES	CHEMICAL MFG	WASTE GAS FLARES	OTHER/NOT CLASIFD	MILLION CUBIC FEET BURNED
INDUSTRIAL PROCES	CHEMICAL MFG	OTHER/NOT CLASIFD	SPECIFY IN REMARK	TONS PRODUCT
INDUSTRIAL PROCES	FOOD/AGRICULTURAL	ALFALFA DEHYDRATN	GENERAL	TONS MEAL PRODUCED
INDUSTRIAL PROCES	FOOD/AGRICULTURAL	ALFALFA DEHYDRATN	OTHER/NOT CLASFD	TONS PRODUCT
INDUSTRIAL PROCES	FOOD/AGRICULTURAL	COFFEE ROASTING	DIRECTFIRE ROASTR	TONS GREEN BEANS
INDUSTRIAL PROCES	FOOD/AGRICULTURAL	COFFEE ROASTING	INDIRCTFIRE ROASTR	TONS GREEN BEANS
INDUSTRIAL PROCES	FOOD/AGRICULTURAL	COFFEE ROASTING	STONER/COOLER	TONS GREEN BEANS
INDUSTRIAL PROCES	FOOD/AGRICULTURAL	COFFEE ROASTING	OTHER/NOT CLASFD	TONS PRODUCT
INDUSTRIAL PROCES	FOOD/AGRICULTURAL	COFFEE-INSTANT	SPRAY DRIER	TONS GREEN BEANS
INDUSTRIAL PROCES	FOOD/AGRICULTURAL	COTTON GINNING	UNLOADING FAN	BALES COTTON
INDUSTRIAL PROCES	FOOD/AGRICULTURAL	COTTON GINNING	CLEANER	BALES COTTON
INDUSTRIAL PROCES	FOOD/AGRICULTURAL	COTTON GINNING	STICK/BURR MACHNE	BALES COTTON
INDUSTRIAL PROCES	FOOD/AGRICULTURAL	COTTON GINNING	OTHER/NOT CLASFD	BALES COTTON
INDUSTRIAL PROCES	FOOD/AGRICULTURAL	FEED/GRAIN TERMEL	SHIPING/RECEIVING	TONS GRAIN PROCESSED
INDUSTRIAL PROCES	FOOD/AGRICULTURAL	FEED/GRAIN TERMEL	TRANSFER/CONVEYNG	TONS GRAIN PROCESSED
INDUSTRIAL PROCES	FOOD/AGRICULTURAL	FEED/GRAIN TERMEL	SCREENING/CLEANNG	TONS GRAIN PROCESSED
INDUSTRIAL PROCES	FOOD/AGRICULTURAL	FEED/GRAIN TERMEL	DRYING	TONS GRAIN PROCESSED
INDUSTRIAL PROCES	FOOD/AGRICULTURAL	FEED/GRAIN CNTRYE	SHIPNG/RECEIVNG	TONS GRAIN PROCESSED
INDUSTRIAL PROCES	FOOD/AGRICULTURAL	FEED/GRAIN CNTRYE	TRANSFER/CONVEYNG	TONS GRAIN PROCESSED
INDUSTRIAL PROCES	FOOD/AGRICULTURAL	FEED/GRAIN CNTRYE	SCREENING/CLEANNG	TONS GRAIN PROCESSED
INDUSTRIAL PROCES	FOOD/AGRICULTURAL	FEED/GRAIN CNTRYE	DRYING	TONS GRAIN PROCESSED
INDUSTRIAL PROCES	FOOD/AGRICULTURAL	FEED/GRAIN	OTHER/NOT CLASIFD	TONS GRAIN PROCESSED
INDUSTRIAL PROCES	FOOD/AGRICULTURAL	GRAIN PROCESSING	CORN MEAL	TONS GRAIN PROCESSED
INDUSTRIAL PROCES	FOOD/AGRICULTURAL	GRAIN PROCESSING	SOY BEAN	TONS GRAIN PROCESSED
INDUSTRIAL PROCES	FOOD/AGRICULTURAL	GRAIN PROCESSING	BARLEY/WHEATCLEAN	TONS GRAIN PROCESSED
INDUSTRIAL PROCES	FOOD/AGRICULTURAL	GRAIN PROCESSING	MILO CLEANER	TONS GRAIN PROCESSED
INDUSTRIAL PROCES	FOOD/AGRICULTURAL	GRAIN PROCESSING	BARLEYFLOUR MILL	TONS GRAIN PROCESSED
INDUSTRIAL PROCES	FOOD/AGRICULTURAL	GRAIN PROCESSING	WET CORN MILLING	TONS OF PRODUCT
INDUSTRIAL PROCES	FOOD/AGRICULTURAL	GRAIN PROCESSING	WHEAT FLOUR MILL	TONS PRODUCT
INDUSTRIAL PROCES	FOOD/AGRICULTURAL	GRAIN PROCESSING	OTHER/NOT CLASFD	TONS PROCESSED
INDUSTRIAL PROCES	FOOD/AGRICULTURAL	FEED MANUFACTURE	BARLEY FEED-GENL	TONS GRAIN PROCESSED
INDUSTRIAL PROCES	FOOD/AGRICULTURAL	FEED MANUFACTURE	OTHER/NOT CLASFD	TONS PROCESSED
INDUSTRIAL PROCES	FOOD/AGRICULTURAL	FERMENTATN-BEER	GRAIN HANDLING	TONS GRAIN PROCESSED
INDUSTRIAL PROCES	FOOD/AGRICULTURAL	FERMENTATN-BEER	DRYING SPNT GRAIN	TONS GRAIN PROCESSED
INDUSTRIAL PROCES	FOOD/AGRICULTURAL	FERMENTATION-BEER	BREWING	THOUSANDS OF GALLONS
INDUSTRIAL PROCES	FOOD/AGRICULTURAL	FERMENTATION-BEER	OTHER/NOT CLASFD	GALLONS PRODUCT
INDUSTRIAL PROCES	FOOD/AGRICULTURAL	FERMENTATION-BEER	OTHER/NOT CLASFD	TONS GRAIN PROCESSED
INDUSTRIAL PROCES	FOOD/AGRICULTURAL	FERMENTATN-WHISKY	GRAIN HANDLING	TONS GRAIN PROCESSED
INDUSTRIAL PROCES	FOOD/AGRICULTURAL	FERMENTATN-WHISKY	DRYING SPNT GRAIN	TONS GRAIN PROCESSED
INDUSTRIAL PROCES	FOOD/AGRICULTURAL	FERMENTATN-WHISKY	AGING	TONS GRAIN PROCESSED
INDUSTRIAL PROCES	FOOD/AGRICULTURAL	FERMENTATN-WHISKY	OTHER/NOT CLASFD	GALLONS PRODUCT
INDUSTRIAL PROCES	FOOD/AGRICULTURAL	FERMENTATN-WINE	GENERAL	GALLONS PRODUCT
INDUSTRIAL PROCES	FOOD/AGRICULTURAL	FISH MEAL	COOKERS-FRESHFISH	TONS FISH MEAL PRODUCED
INDUSTRIAL PROCES	FOOD/AGRICULTURAL	FISH MEAL	COOKERS-STALEFISH	TONS FISH MEAL PRODUCED
INDUSTRIAL PROCES	FOOD/AGRICULTURAL	FISH MEAL	DRIERS	TONS FISH SCRAP
INDUSTRIAL PROCES	FOOD/AGRICULTURAL	FISH MEAL	OTHER/NOT CLASIFD	TONS PROCESSED
INDUSTRIAL PROCES	FOOD/AGRICULTURAL	MEAT SMOKING	GENERAL	TONS MEAT SMOKED
INDUSTRIAL PROCES	FOOD/AGRICULTURAL	STARCH MFG	GENERAL	TONS STARCH PRODUCED
INDUSTRIAL PROCES	FOOD/AGRICULTURAL	SUGAR CANE PROCES	GENERAL	TONS SUGAR PRODUCED
INDUSTRIAL PROCES	FOOD/AGRICULTURAL	SUGAR CANE PROCES	OTHER/NOT CLASIFD	TONS PROCESSED
INDUSTRIAL PROCES	FOOD/AGRICULTURAL	SUGAR BEET PROCES	DRYER ONLY	TONS RAW BEETS
INDUSTRIAL PROCES	FOOD/AGRICULTURAL	SUGAR BEET PROCES	OTHER/NOT CLASIFD	TONS RAW BEETS
INDUSTRIAL PROCES	FOOD/AGRICULTURAL	PEANUT PROCESSING	OIL/NOT CLASFD	TONS PRODUCT
INDUSTRIAL PROCES	FOOD/AGRICULTURAL	PEANUT PROCESSING	OTHER/NOT CLASFD	TONS PROCESSED
INDUSTRIAL PROCES	FOOD/AGRICULTURAL	CANDY/CONFECTNRY	OTHER/NOT CLASFD	TONS PRODUCT
INDUSTRIAL PROCES	FOOD/AGRICULTURAL	DAIRY PRODUCTS	MILK SPRAY-DRYER	TONS PRODUCT
INDUSTRIAL PROCES	FOOD/AGRICULTURAL	DAIRY PRODUCTS	OTHER/NOT CLASFD	TONS PRODUCT
INDUSTRIAL PROCES	FOOD/AGRICULTURAL	OTHER/NOT CLASIFD	SPECIFY IN REMARK	TONS PROCESSED (INPUT)
INDUSTRIAL PROCES	FOOD/AGRICULTURAL	OTHER/NOT CLASIFD	SPECIFY IN REMARK	TONS PRODUCED (FINISHED)
INDUSTRIAL PROCES	PRIMARY METALS	ALUMINUM ORE-BAUX	CRUSHING/HANDLING	TONS OF ORE
INDUSTRIAL PROCES	PRIMARY METALS	AL ORE-ELECROREDN	PREBAKE CELLS	TONS ALUMINUM PRODUCED
INDUSTRIAL PROCES	PRIMARY METALS	AL ORE-ELECROREDN	HORIZSTD SODERBRG	TONS ALUMINUM PRODUCED
INDUSTRIAL PROCES	PRIMARY METALS	AL ORE-ELECROREDN	VERTSTD SODERBERG	TONS ALUMINUM PRODUCED
INDUSTRIAL PROCES	PRIMARY METALS	AL ORE-ELECROREDN	MATERIALS HANDLNG	TONS ALUMINUM PRODUCED
INDUSTRIAL PROCES	PRIMARY METALS	AL ORE-ELECROREDN	ANODE BAKE FURNCE	TONS ALUMINUM PRODUCED
INDUSTRIAL PROCES	PRIMARY METALS	ALUMINUM OPERATN	OTHER/NOT CLASFD	TONS ALUMINUM PRODUCED
INDUSTRIAL PROCES	PRIMARY METALS	AL ORE-CALC ALHYD	GENERAL	TONS ALUMINUM PRODUCED
INDUSTRIAL PROCES	PRIMARY METALS	COKE MET BYPRODUC	GENERAL	TONS COAL CHARGED
INDUSTRIAL PROCES	PRIMARY METALS	COKE-MET BYPRODUC	OVEN CHARGING	TONS COAL CHARGED

TABLE 2.1-4. (Continued)

NATIONAL EMISSIONS DATA SYSTEM (NEDS)
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SCC CATEGORY NAMES				
I	II	III	IV	UNITS
INDUSTRIAL PROCES	PRIMARY METALS	COKE-MET BYPRODUC	OVEN PUSHING	TONS COAL CHARGED
INDUSTRIAL PROCES	PRIMARY METALS	COKE-MET BYPRODUC	QUENCHING	TONS COAL CHARGED
INDUSTRIAL PROCES	PRIMARY METALS	COKE-MET BYPRODUC	UNLOADING	TONS COAL CHARGED
INDUSTRIAL PROCES	PRIMARY METALS	COKE-MET BYPRODUC	UNDERFIRING	TONS COAL CHARGED
INDUSTRIAL PROCES	PRIMARY METALS	COKE-MET BYPRODUC	OTHER/NOT CLASFD	TONS COAL CHARGED
INDUSTRIAL PROCES	PRIMARY METALS	COKE MET-BEEHIVE	GENERAL	TONS COAL CHARGED
INDUSTRIAL PROCES	PRIMARY METALS	COPPER SMELTER	TOTAL/GENERAL	TONS CONCENTRATED ORE
INDUSTRIAL PROCES	PRIMARY METALS	COPPER SMELTER	ROASTING	TONS CONCENTRATED ORE
INDUSTRIAL PROCES	PRIMARY METALS	COPPER SMELTER	SMELTING	TONS CONCENTRATED ORE
INDUSTRIAL PROCES	PRIMARY METALS	COPPER SMELTER	CONVERTING	TONS CONCENTRATED ORE
INDUSTRIAL PROCES	PRIMARY METALS	COPPER SMELTER	REFINING	TONS CONCENTRATED ORE
INDUSTRIAL PROCES	PRIMARY METALS	COPPER MINE	ORE DRYER	TONS OF ORE
INDUSTRIAL PROCES	PRIMARY METALS	COPPER SMELTER	OTHER/NOT CLASFD	TONS CONCENTRATED ORE
INDUSTRIAL PROCES	PRIMARY METALS	FERALLOY OPEN FNC	50% FESI	TONS PRODUCED
INDUSTRIAL PROCES	PRIMARY METALS	FERALLOY OPEN FNC	75% FESI	TONS PRODUCED
INDUSTRIAL PROCES	PRIMARY METALS	FERALLOY OPEN FNC	90% FESI	TONS PRODUCED
INDUSTRIAL PROCES	PRIMARY METALS	FERALLOY OPEN FNC	SILICON METAL	TONS PRODUCED
INDUSTRIAL PROCES	PRIMARY METALS	FERALLOY OPEN FNC	SILICOMANGANESE	TONS PRODUCED
INDUSTRIAL PROCES	PRIMARY METALS	FERROALLOY	SCREENING	TONS PROCESSED
INDUSTRIAL PROCES	PRIMARY METALS	FERROALLOY	ORE DRYER	TONS PROCESSED
INDUSTRIAL PROCES	PRIMARY METALS	FERROALLOY	LOWCARB CR-REACTR	TONS PROCESSED
INDUSTRIAL PROCES	PRIMARY METALS	FERROALLOY	OTHER/NOT CLASFD	TONS PRODUCED
INDUSTRIAL PROCES	PRIMARY METALS	FERALOY SEMCOVFNC	FERROMANGANESE	TONS PRODUCED
INDUSTRIAL PROCES	PRIMARY METALS	FERALOY COVD FNC	GENERAL	TONS PRODUCED
INDUSTRIAL PROCES	PRIMARY METALS	IRON PRODUCTION	BLAST FNC-ORECHG	TONS PRODUCED
INDUSTRIAL PROCES	PRIMARY METALS	IRON PRODUCTION	BLAST FNC-AGLCHG	TONS PRODUCED
INDUSTRIAL PROCES	PRIMARY METALS	IRON PRODUCTION	SINTERING GENERAL	TONS PRODUCED
INDUSTRIAL PROCES	PRIMARY METALS	IRON PRODUCTION	ORE-CRUSH/HANDLE	TONS OF ORE
INDUSTRIAL PROCES	PRIMARY METALS	IRON PRODUCTION	SCARFING	TONS PROCESSED
INDUSTRIAL PROCES	PRIMARY METALS	IRON PRODUCTION	SAND HANDLING OPN	TONS HANDLED
INDUSTRIAL PROCES	PRIMARY METALS	IRON PRODUCTION	MOLD OVENS	TONS SAND BAKED
INDUSTRIAL PROCES	PRIMARY METALS	IRON PRODUCTION	OTHER/NOT CLASFD	TONS PRODUCED
INDUSTRIAL PROCES	PRIMARY METALS	STEEL PRODUCTION	OPNHEARTH O2LANCE	TONS PRODUCED
INDUSTRIAL PROCES	PRIMARY METALS	STEEL PRODUCTION	OPNHEARTH NOLANCE	TONS PRODUCED
INDUSTRIAL PROCES	PRIMARY METALS	STEEL PRODUCTION	BOF-GENERAL	TONS PRODUCED
INDUSTRIAL PROCES	PRIMARY METALS	STEEL PRODUCTION	ELECT ARC W/LANCE	TONS PRODUCED
INDUSTRIAL PROCES	PRIMARY METALS	STEEL PRODUCTION	ELECT ARC NOLANCE	TONS PRODUCED
INDUSTRIAL PROCES	PRIMARY METALS	STEEL PRODUCTION	OTHER/NOT CLASFD	TONS PRODUCED
INDUSTRIAL PROCES	PRIMARY METALS	LEAD SMELTERS	SINTER/CRUSHING	TONS CONCENTRATED ORE
INDUSTRIAL PROCES	PRIMARY METALS	LEAD SMELTERS	BLAST FURNACE	TONS CONCENTRATED ORE
INDUSTRIAL PROCES	PRIMARY METALS	LEAD SMELTERS	REVERB FURNACE	TONS CONCENTRATED ORE
INDUSTRIAL PROCES	PRIMARY METALS	LEAD SMELTERS	OTHER/NOT CLASFD	TONS CONCENTRATED ORE
INDUSTRIAL PROCES	PRIMARY METALS	MOLYBDNUM MINING	GENERAL	HUNDREDS OF TONS MINED
INDUSTRIAL PROCES	PRIMARY METALS	MOLYBDNUM MILLING	GENERAL	TONS PRODUCT
INDUSTRIAL PROCES	PRIMARY METALS	MOLYBDNUM PROCES	OTHER/NOT CLASIFD	TONS PROCESSED
INDUSTRIAL PROCES	PRIMARY METALS	TITANIUM PROCESS	CHLORINATION STAT	TONS PRODUCT
INDUSTRIAL PROCES	PRIMARY METALS	TITANIUM PROCES	OTHER/NOT CLASIFD	TONS PROCESSED
INDUSTRIAL PROCES	PRIMARY METALS	GOLD	MINING/PROCESSING	TONS ORE
INDUSTRIAL PROCES	PRIMARY METALS	BARIUM	ORE GRIND	TONS PROCESSED
INDUSTRIAL PROCES	PRIMARY METALS	BARIUM	REDUCTN KILN	TONS PROCESSED
INDUSTRIAL PROCES	PRIMARY METALS	BARIUM	DRIERS/CALCINERS	TONS PROCESSED
INDUSTRIAL PROCES	PRIMARY METALS	BARIUM	OTHER/NOT CLASFD	TONS PROCESSED
INDUSTRIAL PROCES	PRIMARY METALS	ZINC SMELTING	GENERAL	TONS PROCESSED
INDUSTRIAL PROCES	PRIMARY METALS	ZINC SMELTING	ROASTNG/MULT-HRTH	TONS PROCESSED
INDUSTRIAL PROCES	PRIMARY METALS	ZINC SMELTING	SINTERING	TONS PROCESSED
INDUSTRIAL PROCES	PRIMARY METALS	ZINC SMELTING	HORIZ RETORTS	TONS PROCESSED
INDUSTRIAL PROCES	PRIMARY METALS	ZINC SMELTING	VERT RETORTS	TONS PROCESSED
INDUSTRIAL PROCES	PRIMARY METALS	ZINC SMELTING	ELECTROLYTIC PROC	TONS PROCESSED
INDUSTRIAL PROCES	PRIMARY METALS	ZINC SMELTING	OTHER/NOT CLASFD	TONS PROCESSED
INDUSTRIAL PROCES	PRIMARY METALS	OTHER/NOT CLASFD	SPECIFY IN REMARK	TONS PRODUCED
INDUSTRIAL PROCES	SECONDARY METALS	ALUMINUM OPERATN	SWEATINGFURNACE	TONS PRODUCED
INDUSTRIAL PROCES	SECONDARY METALS	ALUMINUM OPERATN	SMELT-CRUCIBLE	TONS METAL PRODUCED
INDUSTRIAL PROCES	SECONDARY METALS	ALUMINUM OPERATN	SMELT-REVERB FNC	TONS METAL PRODUCED
INDUSTRIAL PROCES	SECONDARY METALS	ALUMINUM OPERATN	CHLORINATN STATN	TONS METAL PRODUCED
INDUSTRIAL PROCES	SECONDARY METALS	ALUMINUM OPERATN	FOIL ROLLING	TONS PRODUCT
INDUSTRIAL PROCES	SECONDARY METALS	ALUMINUM OPERATN	FOIL CONVERTING	TONS PRODUCED
INDUSTRIAL PROCES	SECONDARY METALS	ALUMINUM OPERATN	CAN MANUFACTURE	TONS PRODUCED
INDUSTRIAL PROCES	SECONDARY METALS	ALUMINUM OPERATN	ROLL-DRAW-EXTRUDE	TONS PRODUCED
INDUSTRIAL PROCES	SECONDARY METALS	ALUMINUM OPERATN	OTHER/NOT CLASFD	TONS PRODUCED
INDUSTRIAL PROCES	SECONDARY METALS	BRASS/BRONZ MELT	BLAST FNC	TONS CHARGE
INDUSTRIAL PROCES	SECONDARY METALS	BRASS/BRONZ MELT	CRUCIBLE FNC	TONS CHARGE
INDUSTRIAL PROCES	SECONDARY METALS	BRASS/BRONZ MELT	CUPOLA FNC	TONS CHARGE
INDUSTRIAL PROCES	SECONDARY METALS	BRASS/BRONZ MELT	ELECT INDUCTION	TONS CHARGE
INDUSTRIAL PROCES	SECONDARY METALS	BRASS/BRONZ MELT	REVERB FNC	TONS CHARGE
INDUSTRIAL PROCES	SECONDARY METALS	BRASS/BRONZ MELT	ROTARY FNC	TONS CHARGE
INDUSTRIAL PROCES	SECONDARY METALS	BRASS/BRONZ MELT	OTHER/NOT CLASIFD	TONS PRODUCED
INDUSTRIAL PROCES	SECONDARY METALS	GRAY IRON	CUPOLA	TONS METAL CHARGE
INDUSTRIAL PROCES	SECONDARY METALS	GRAY IRON	REVERB FNC	TONS METAL CHARGE
INDUSTRIAL PROCES	SECONDARY METALS	GRAY IRON	ELECT INDUCTION	TONS METAL CHARGE
INDUSTRIAL PROCES	SECONDARY METALS	GRAY IRON	ANNEALING OPERATN	TONS METAL CHARGE
INDUSTRIAL PROCES	SECONDARY METALS	GRAY IRON	MISC CAST-FABCTN	TONS PROCESSED
INDUSTRIAL PROCES	SECONDARY METALS	GRAY IRON	GRINDING-CLEANING	TONS PROCESSED
INDUSTRIAL PROCES	SECONDARY METALS	GRAY IRON	OTHER/NOT CLASIFD	TONS METAL CHARGE
INDUSTRIAL PROCES	SECONDARY METALS	LEAD SMELT SEC	POT FURNACE	TONS PROCESSED
INDUSTRIAL PROCES	SECONDARY METALS	LEAD SMELT SEC	REVERB FNC	TONS PROCESSED
INDUSTRIAL PROCES	SECONDARY METALS	LEAD SMELT SEC	BLAST/CUPOLA FNC	TONS PROCESSED
INDUSTRIAL PROCES	SECONDARY METALS	LEAD SMELT SEC	ROTARY REVERB FNC	TONS PROCESSED
INDUSTRIAL PROCES	SECONDARY METALS	LEAD SMELT SEC	LEAD OXIDE MFG	TONS PROCESSED
INDUSTRIAL PROCES	SECONDARY METALS	LEAD SMELT SEC	OTHER/NOT CLASIFD	TONS PROCESSED
INDUSTRIAL PROCES	SECONDARY METALS	LEAD BATTERY	GENERAL	TONS PROCESSED
INDUSTRIAL PROCES	SECONDARY METALS	LEAD BATTERY	OTHER/NOT CLASIFD	TONS PROCESSED
INDUSTRIAL PROCES	SECONDARY METALS	MAGNESIUM SEC	POT FURNACE	TONS PROCESSED
INDUSTRIAL PROCES	SECONDARY METALS	MAGNESIUM SEC	OTHER/NOT CLASIFD	TONS PROCESSED
INDUSTRIAL PROCES	SECONDARY METALS	STEEL FOUNDRY	ELECTRIC ARC FNC	TONS PROCESSED
INDUSTRIAL PROCES	SECONDARY METALS	STEEL FOUNDRY	OPEN HEARTH FNC	TONS PROCESSED
INDUSTRIAL PROCES	SECONDARY METALS	STEEL FOUNDRY	OPEN HEARTH LANCD	TONS PROCESSED
INDUSTRIAL PROCES	SECONDARY METALS	STEEL FOUNDRY	HEAT-TREAT FNC	TONS PROCESSED
INDUSTRIAL PROCES	SECONDARY METALS	STEEL FOUNDRY	INDUCTION FURNACE	TONS PROCESSED
INDUSTRIAL PROCES	SECONDARY METALS	STEEL FOUNDRY	OTHER/NOT CLASIFD	TONS PROCESSED
INDUSTRIAL PROCES	SECONDARY METALS	ZINC SEC	RETORT FNC	TONS PRODUCED

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TABLE 2.1-4. (Continued)
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                              SCC CATEGORY NAMES
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      I                II                III              IV                UNITS

INDUSTRIAL PROCES|SECONDARY METALS |ZINC SEC         |HORIZ MUFFLE FNC |TONS PRODUCED
INDUSTRIAL PROCES|SECONDARY METALS |ZINC SEC         |POT FURNACE      |TONS PRODUCED
INDUSTRIAL PROCES|SECONDARY METALS |ZINC SEC         |KETTLE-SWEAT FNC |TONS PRODUCED
INDUSTRIAL PROCES|SECONDARY METALS |ZINC SEC         |GALVANIZING KETTL|TONS PRODUCED
INDUSTRIAL PROCES|SECONDARY METALS |ZINC SEC         |CALCINING KILN   |TONS PRODUCED
INDUSTRIAL PROCES|SECONDARY METALS |ZINC SEC         |CONCENTRATE DRYER|TONS PROCESSED
INDUSTRIAL PROCES|SECONDARY METALS |ZINC SEC         |REVERB-SWEAT FNC |TONS PRODUCED
INDUSTRIAL PROCES|SECONDARY METALS |ZINC SEC         |OTHER/NOT CLASIFD|TONS PROCESSED
INDUSTRIAL PROCES|SECONDARY METALS |MALLEABLE IRON   |ANNEALING OPERATN|TONS METAL CHARGE
INDUSTRIAL PROCES|SECONDARY METALS |MALLEABLE IRON   |OTHER/NOT CLASIFD|TONS METAL CHARGE
INDUSTRIAL PROCES|SECONDARY METALS |NICKEL           |FLUX FURNACE     |TONS PROCESSED
INDUSTRIAL PROCES|SECONDARY METALS |NICKEL           |OTHER/NOT CLASIFD|TONS PROCESSED
INDUSTRIAL PROCES|SECONDARY METALS |ZIRCONIUM        |OXIDE KILN       |TONS PROCESSED
INDUSTRIAL PROCES|SECONDARY METALS |ZIRCONIUM        |OTHER/NOT CLASIFD|TONS PROCESSED
INDUSTRIAL PROCES|SECONDARY METALS |FURNACE ELECTRODE|CALCINATION      |TONS PROCESSED
INDUSTRIAL PROCES|SECONDARY METALS |FURNACE ELECTRODE|MIXING           |TONS PROCESSED
INDUSTRIAL PROCES|SECONDARY METALS |FURNACE ELECTRODE|PITCH TREATING   |TONS PROCESSED
INDUSTRIAL PROCES|SECONDARY METALS |FURNACE ELECTRODE|BAKE FURNACES    |TONS PROCESSED
INDUSTRIAL PROCES|SECONDARY METALS |FURNACE ELECTRODE|OTHER/NOT CLASIFD|TONS PROCESSED
INDUSTRIAL PROCES|SECONDARY METALS |MISC CAST&FABRCTN|SPECIFY IN REMARK|TONS PRODUCED
INDUSTRIAL PROCES|SECONDARY METALS |OTHER/NOT CLASIFD|SPECIFY IN REMARK|TONS PROCESSED
INDUSTRIAL PROCES|MINERAL PRODUCTS |ASPHALT ROOFING  |BLOWING OPERATION|TONS SATURATED FELT PRODUCED
INDUSTRIAL PROCES|MINERAL PRODUCTS |ASPHALT ROOFING  |DIPPING ONLY     |TONS SATURATED FELT PRODUCED
INDUSTRIAL PROCES|MINERAL PRODUCTS |ASPHALT ROOFING  |SPRAYING ONLY    |TONS SATURATED FELT PRODUCED
INDUSTRIAL PROCES|MINERAL PRODUCTS |ASPHALT ROOFING  |DIPPING/SPRAYING |TONS SATURATED FELT PRODUCED
INDUSTRIAL PROCES|MINERAL PRODUCTS |ASPHALT ROOFING  |OTHER/NOT CLASIFD|TONS SATURATED FELT PRODUCED
INDUSTRIAL PROCES|MINERAL PRODUCTS |ASPHALTIC CONCRET|ROTARY DRYER     |TONS PRODUCED
INDUSTRIAL PROCES|MINERAL PRODUCTS |ASPHALTIC CONCRET|OTHER SOURCES    |TONS PRODUCED
INDUSTRIAL PROCES|MINERAL PRODUCTS |ASPHALTIC CONCRET|OTHER/NOT CLASIFD|TONS PRODUCED
INDUSTRIAL PROCES|MINERAL PRODUCTS |BRICK MANUFACTURE|DRYING-RAW MTL   |TONS PRODUCED
INDUSTRIAL PROCES|MINERAL PRODUCTS |BRICK MANUFACTURE|GRINDING-RAW MTL |TONS PRODUCED
INDUSTRIAL PROCES|MINERAL PRODUCTS |BRICK MANUFACTURE|STORAGE-RAW MTL  |TONS PRODUCED
INDUSTRIAL PROCES|MINERAL PRODUCTS |BRICK MANUFACTURE|CURING GAS FIRED |TONS PRODUCED
INDUSTRIAL PROCES|MINERAL PRODUCTS |BRICK MANUFACTURE|CURING OIL FIRED |TONS PRODUCED
INDUSTRIAL PROCES|MINERAL PRODUCTS |BRICK MANUFACTURE|CURING COAL FIRED|TONS PRODUCED
INDUSTRIAL PROCES|MINERAL PRODUCTS |BRICK MANUFACTURE|OTHER/NOT CLASIFD|TONS PRODUCED
INDUSTRIAL PROCES|MINERAL PRODUCTS |CALCIUM CARBIDE  |ELECTRIC FNC     |TONS PRODUCED
INDUSTRIAL PROCES|MINERAL PRODUCTS |CALCIUM CARBIDE  |COKE DRYER       |TONS PRODUCED
INDUSTRIAL PROCES|MINERAL PRODUCTS |CALCIUM CARBIDE  |FNC ROOM VENTS   |TONS PRODUCED
INDUSTRIAL PROCES|MINERAL PRODUCTS |CALCIUM CARBIDE  |OTHER/NOT CLASIFD|TONS PROCESSED
INDUSTRIAL PROCES|MINERAL PRODUCTS |CASTABLE REFRACTY|RAWMATL DRYER    |TONS FEED MATERIAL
INDUSTRIAL PROCES|MINERAL PRODUCTS |CASTABLE REFRACTY|RAWMATL CRUSH/PRC|TONS FEED MATERIAL
INDUSTRIAL PROCES|MINERAL PRODUCTS |CASTABLE REFRACTY|ELECTRIC ARC MELT|TONS FEED MATERIAL
INDUSTRIAL PROCES|MINERAL PRODUCTS |CASTABLE REFRACTY|CURING OVEN      |TONS FEED MATERIAL
INDUSTRIAL PROCES|MINERAL PRODUCTS |CASTABLE REFRACTY|MOLD/SHAKEOUT    |TONS FEED MATERIAL
INDUSTRIAL PROCES|MINERAL PRODUCTS |CASTABLE REFRACTY|OTHER/NOT CLASIFD|TONS FEED MATERIAL
INDUSTRIAL PROCES|MINERAL PRODUCTS |CEMENT MFG DRY   |KILNS            |BARRELS CEMENT PRODUCED
INDUSTRIAL PROCES|MINERAL PRODUCTS |CEMENT MFG DRY   |DRYERS/GRINDERETC|BARRELS CEMENT PRODUCED
INDUSTRIAL PROCES|MINERAL PRODUCTS |CEMENT MFG DRY   |KILNS-OIL FIRED  |TONS CEMENT PRODUCED
INDUSTRIAL PROCES|MINERAL PRODUCTS |CEMENT MFG DRY   |KILNS-GAS FIRED  |TONS CEMENT PRODUCED
INDUSTRIAL PROCES|MINERAL PRODUCTS |CEMENT MFG DRY   |KILNS-COAL FIRED |TONS CEMENT PRODUCED
INDUSTRIAL PROCES|MINERAL PRODUCTS |CEMENT MFG DRY   |OTHER/NOT CLASIFD|TONS CEMENT PRODUCED
INDUSTRIAL PROCES|MINERAL PRODUCTS |CEMENT MFG WET   |KILNS            |BARRELS CEMENT PRODUCED
INDUSTRIAL PROCES|MINERAL PRODUCTS |CEMENT MFG WET   |DRYERS/GRINDERETC|BARRELS CEMENT PRODUCED
INDUSTRIAL PROCES|MINERAL PRODUCTS |CEMENT MFG WET   |KILNS-OIL FIRED  |TONS CEMENT PRODUCED
INDUSTRIAL PROCES|MINERAL PRODUCTS |CEMENT MFG WET   |KILNS GAS FIRED  |TONS CEMENT PRODUCED
INDUSTRIAL PROCES|MINERAL PRODUCTS |CEMENT MFG WET   |KILNS-COAL FIRED |TONS CEMENT PRODUCED
INDUSTRIAL PROCES|MINERAL PRODUCTS |CEMENT MFG WET   |OTHER/NOT CLASIFD|TONS CEMENT PRODUCED
INDUSTRIAL PROCES|MINERAL PRODUCTS |CERAMIC/CLAY MFG |DRYING           |TONS INPUT TO PROCESS
INDUSTRIAL PROCES|MINERAL PRODUCTS |CERAMIC/CLAY MFG |GRINDING         |TONS INPUT TO PROCESS
INDUSTRIAL PROCES|MINERAL PRODUCTS |CERAMIC/CLAY MFG |STORAGE          |TONS INPUT TO PROCESS
INDUSTRIAL PROCES|MINERAL PRODUCTS |CERAMIC/CLAY MFG |OTHER/NOT CLASIFD|TONS PRODUCED
INDUSTRIAL PROCES|MINERAL PRODUCTS |CLAY/FLYASHSINTER|FLYASH           |TONS FINISHED PRODUCT
INDUSTRIAL PROCES|MINERAL PRODUCTS |CLAY/FLYASHSINTER|CLAY/COKE        |TONS FINISHED PRODUCT
INDUSTRIAL PROCES|MINERAL PRODUCTS |CLAY/FLYASHSINTER|NATURAL CLAY     |TONS FINISHED PRODUCT
INDUSTRIAL PROCES|MINERAL PRODUCTS |CLAY/FLYASHSINTER|OTHER/NOT CLASIFD|TONS PRODUCED
INDUSTRIAL PROCES|MINERAL PRODUCTS |COAL CLEANING    |THERM/FLUID BED  |TONS COAL DRIED
INDUSTRIAL PROCES|MINERAL PRODUCTS |COAL CLEANING    |THERM/FLASH      |TONS COAL DRIED
INDUSTRIAL PROCES|MINERAL PRODUCTS |COAL CLEANING    |THERM/MULTILOUVRD|TONS COAL DRIED
INDUSTRIAL PROCES|MINERAL PRODUCTS |COAL CLEANING    |OTHER/NOT CLASIFD|TONS COAL CLEANED
INDUSTRIAL PROCES|MINERAL PRODUCTS |CONCRETE BATCHING|GENERAL          |CUBIC YARDS CONCRETE PRODUCED
INDUSTRIAL PROCES|MINERAL PRODUCTS |CONCRETE BATCHING|ASBEST/CEMNT PDTS|TONS PRODUCT
INDUSTRIAL PROCES|MINERAL PRODUCTS |CONCRETE BATCHING|OTHER/NOT CLASFD |TONS PRODUCT
INDUSTRIAL PROCES|MINERAL PRODUCTS |FIBERGLASS MFG   |REVERBFNC-REGENEX|TONS MATERIAL PROCESSED
INDUSTRIAL PROCES|MINERAL PRODUCTS |FIBERGLASS MFG   |REVERBFNC-RECUPEX|TONS MATERIAL PROCESSED
INDUSTRIAL PROCES|MINERAL PRODUCTS |FIBERGLASS MFG   |ELECTRIC IND FNC |TONS MATERIAL PROCESSED
INDUSTRIAL PROCES|MINERAL PRODUCTS |FIBERGLASS MFG   |FORMING LINE     |TONS MATERIAL PROCESSED
INDUSTRIAL PROCES|MINERAL PRODUCTS |FIBERGLASS MFG   |CURING OVEN      |TONS MATERIAL PROCESSED
INDUSTRIAL PROCES|MINERAL PRODUCTS |FIBERGLASS MFG   |OTHER/NOT CLASIFD|TONS PROCESSED
INDUSTRIAL PROCES|MINERAL PRODUCTS |FRIT MFG         |ROTARY FNC GENL  |TONS CHARGE
INDUSTRIAL PROCES|MINERAL PRODUCTS |FRIT MFG         |OTHER/NOT CLASIFD|TONS CHARGED
INDUSTRIAL PROCES|MINERAL PRODUCTS |GLASS MFG        |SODALIME GENL FNC|TONS GLASS PRODUCED
INDUSTRIAL PROCES|MINERAL PRODUCTS |GLASS MFG        |RAW MAT REC/STORG|TONS PROCESSED
INDUSTRIAL PROCES|MINERAL PRODUCTS |GLASS MFG        |BATCHING/MIXING  |TONS PROCESSED
INDUSTRIAL PROCES|MINERAL PRODUCTS |GLASS MFG        |MOLTEN HOLD TANKS|TONS PROCESSED
INDUSTRIAL PROCES|MINERAL PRODUCTS |GLASS MFG        |OTHER/NOT CLASIFD|TONS PRODUCED
INDUSTRIAL PROCES|MINERAL PRODUCTS |GYPSUM MFG       |RW MTL DRYER     |TONS THROUGHPUT
INDUSTRIAL PROCES|MINERAL PRODUCTS |GYPSUM MFG       |PRIMARY GRINDER  |TONS THROUGHPUT
INDUSTRIAL PROCES|MINERAL PRODUCTS |GYPSUM MFG       |CALCINER         |TONS THROUGHPUT
INDUSTRIAL PROCES|MINERAL PRODUCTS |GYPSUM MFG       |CONVEYING        |TONS THROUGHPUT
INDUSTRIAL PROCES|MINERAL PRODUCTS |GYPSUM MFG       |OTHER/NOT CLASIFD|TONS THROUGHPUT
INDUSTRIAL PROCES|MINERAL PRODUCTS |LIME MFG         |PRIMARY CRUSHING |TONS PROCESSED
INDUSTRIAL PROCES|MINERAL PRODUCTS |LIME MFG         |SECNDRY CRUSHING |TONS PROCESSED
INDUSTRIAL PROCES|MINERAL PRODUCTS |LIME MFG         |CALCINING-VERTKILN|TONS PROCESSED
INDUSTRIAL PROCES|MINERAL PRODUCTS |LIME MFG         |CALCINING-ROTYKILN|TONS PROCESSED
INDUSTRIAL PROCES|MINERAL PRODUCTS |LIME MFG         |OTHER/NOT CLASIFD|TONS PROCESSED
INDUSTRIAL PROCES|MINERAL PRODUCTS |MINERAL WOOL     |CUPOLA           |TONS CHARGE
INDUSTRIAL PROCES|MINERAL PRODUCTS |MINERAL WOOL     |REVERB FNC       |TONS CHARGE
INDUSTRIAL PROCES|MINERAL PRODUCTS |MINERAL WOOL     |BLOW CHAMBER     |TONS CHARGE
INDUSTRIAL PROCES|MINERAL PRODUCTS |MINERAL WOOL     |CURING OVEN      |TONS CHARGE
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TABLE 2.1-4. (Continued)

NATIONAL EMISSIONS DATA SYSTEM (NEDS)
SOURCE CLASSIFICATION CODE (SCC) REPORT

SCC CATEGORY NAMES

I	II	III	IV	UNITS
INDUSTRIAL PROCES	MINERAL PRODUCTS	MINERAL WOOL	COOLER	TONS CHARGE
INDUSTRIAL PROCES	MINERAL PRODUCTS	MINERAL WOOL	OTHER/NOT CLASIFD	TONS PROCESSED
INDUSTRIAL PROCES	MINERAL PRODUCTS	PERLITE MFG	VERTICAL FNC GEN	TONS CHARGE
INDUSTRIAL PROCES	MINERAL PRODUCTS	PERLITE MFG	OTHER/NOT CLASIFD	TONS PROCESSED
INDUSTRIAL PROCES	MINERAL PRODUCTS	PHOSPHATE ROCK	DRYING	TONS PHOSPHATE ROCK
INDUSTRIAL PROCES	MINERAL PRODUCTS	PHOSPHATE ROCK	GRINDING	TONS PHOSPHATE ROCK
INDUSTRIAL PROCES	MINERAL PRODUCTS	PHOSPHATE ROCK	TRANSFER/STORAGE	TONS PHOSPHATE ROCK
INDUSTRIAL PROCES	MINERAL PRODUCTS	PHOSPHATE ROCK	OPEN STORAGE	TONS PHOSPHATE ROCK
INDUSTRIAL PROCES	MINERAL PRODUCTS	PHOSPHATE ROCK	OTHER/NOT CLASIFD	TONS PROCESSED
INDUSTRIAL PROCES	MINERAL PRODUCTS	STONE QUARY/PROC	PRIMARY CRUSHING	TONS RAW MATERIAL
INDUSTRIAL PROCES	MINERAL PRODUCTS	STONE QUARY/PROC	SEC CRUSH/SCREEN	TONS RAW MATERIAL
INDUSTRIAL PROCES	MINERAL PRODUCTS	STONE QUARY/PROC	TERT CRUSH/SCREEN	TONS RAW MATERIAL
INDUSTRIAL PROCES	MINERAL PRODUCTS	STONE QUARY/PROC	RECRUSH/SCREENING	TONS RAW MATERIAL
INDUSTRIAL PROCES	MINERAL PRODUCTS	STONE QUARY/PROC	FINES MILL	TONS RAW MATERIAL
INDUSTRIAL PROCES	MINERAL PRODUCTS	STONE QUARY/PROC	SCREEN/CONVY/HNDL	TONS PRODUCT
INDUSTRIAL PROCES	MINERAL PRODUCTS	STONE QUARY/PROC	OPEN STORAGE	TONS PRODUCT STORED
INDUSTRIAL PROCES	MINERAL PRODUCTS	STONE QUARRY PROC	CUT STONE-GENERAL	TONS PROCESSED
INDUSTRIAL PROCES	MINERAL PRODUCTS	STONE QUARRY PROC	BLASTING-GENERAL	TONS PROCESSED
INDUSTRIAL PROCES	MINERAL PRODUCTS	STONE QUARRY PROC	OTHER/NOT CLASIFD	TONS PROCESSED
INDUSTRIAL PROCES	MINERAL PRODUCTS	SALT MINING	GENERAL	TONS MINED
INDUSTRIAL PROCES	MINERAL PRODUCTS	POTASH PRODUCTION	MINE-GRIND/DRY	TONS ORE
INDUSTRIAL PROCES	MINERAL PRODUCTS	POTASH PRODUCTION	OTHER/NOT CLASIFD	TONS PROCESSED
INDUSTRIAL PROCES	MINERAL PRODUCTS	CALCIUM BORATE	MINING/PROCESSING	TONS PRODUCT
INDUSTRIAL PROCES	MINERAL PRODUCTS	CALCIUM BORATE	OTHER/NOT CLASIFD	TONS PROCESSED
INDUSTRIAL PROCES	MINERAL PRODUCTS	MG CARBONATE	MINE/PROCESS	TONS PRODUCT
INDUSTRIAL PROCES	MINERAL PRODUCTS	MG CARBONATE	OTHER/NOT CLASIFD	TONS PROCESSED
INDUSTRIAL PROCES	MINERAL PRODUCTS	SAND/GRAVEL	CRUSHING/SCREENIN	TONS PRODUCT
INDUSTRIAL PROCES	MINERAL PRODUCTS	SAND/GRAVEL	OTHER/NOT CLASIFD	TONS PROCESSED
INDUSTRIAL PROCES	MINERAL PRODUCTS	DIATOMACOUSERTH	HANDLING	TONS PRODUCT
INDUSTRIAL PROCES	MINERAL PRODUCTS	DIATOMACOUS EARTH	OTHER/NOT CLASIFD	TONS PROCESSED
INDUSTRIAL PROCES	MINERAL PRODUCTS	CERAMIC ELECT PTS	OTHER/NOT CLASIFD	TONS PROCESSED
INDUSTRIAL PROCES	MINERAL PRODUCTS	OTHER/NOT CLASIFD	SPECIFY IN REMARK	TONS PRODUCT
INDUSTRIAL PROCES	PETROLEUM INDRY	PROCESS HEATER	OIL	1000 BARRELS OIL BURNED
INDUSTRIAL PROCES	PETROLEUM INDRY	PROCESS HEATER	GAS	1000 CUBIC FEET GAS BURNED
INDUSTRIAL PROCES	PETROLEUM INDRY	PROCESS HEATER	OIL	1000 GALLONS OIL BURNED
INDUSTRIAL PROCES	PETROLEUM INDRY	PROCESS HEATER	GAS	MILLION CUBIC FEET BURNED
INDUSTRIAL PROCES	PETROLEUM INDRY	FLUID CRACKERS	GENERAL (FCC)	1000 BARRELS FRESH FEED
INDUSTRIAL PROCES	PETROLEUM INDRY	MOV-BED CAT-CRACK	GENERAL (TCC)	1000 BARRELS FRESH FEED
INDUSTRIAL PROCES	PETROLEUM INDRY	BLOW-DOWN SYSTM	W/CONTROLS	1000 BARRELS REFINERY CAPACITY
INDUSTRIAL PROCES	PETROLEUM INDRY	BLOW-DOWN SYSTM	W/O CONTROLS	1000 BARRELS REFINERY CAPACITY
INDUSTRIAL PROCES	PETROLEUM INDRY	PROCESS DRAINS	GEN W/CONTROL	1000 BARRELS WASTE WATER
INDUSTRIAL PROCES	PETROLEUM INDRY	PROCESS DRAINS	GEN W/O CONTROL	1000 BARRELS WASTE WATER
INDUSTRIAL PROCES	PETROLEUM INDRY	VACUUM JETS	W/CONTROL	1000 BARRELS VACUUM DISTILLATION
INDUSTRIAL PROCES	PETROLEUM INDRY	VACUUM JETS	W/O CONTROL	1000 BARRELS VACUUM DISTILLATION
INDUSTRIAL PROCES	PETROLEUM INDRY	COOLING TOWERS		MILLION GALLONS COOLING WATER
INDUSTRIAL PROCES	PETROLEUM INDRY	MISCELLANEOUS	PIPE/VALVE-FLANGE	1000 BARRELS REFINERY CAPACITY
INDUSTRIAL PROCES	PETROLEUM INDRY	MISCELLANEOUS	VESL RELIEF VALVE	1000 BARRELS REFINERY CAPACITY
INDUSTRIAL PROCES	PETROLEUM INDRY	MISCELLANEOUS	PUMP SEALS	1000 BARRELS REFINERY CAPACITY
INDUSTRIAL PROCES	PETROLEUM INDRY	MISCELLANEOUS	COMPRESR SEALS	1000 BARRELS REFINERY CAPACITY
INDUSTRIAL PROCES	PETROLEUM INDRY	MISCELLANEOUS	OTHER-GENL	1000 BARRELS REFINERY CAPACITY
INDUSTRIAL PROCES	PETROLEUM INDRY	FLARES	NATURAL GAS	MILLIONS OF CUBIC FEET
INDUSTRIAL PROCES	PETROLEUM INDRY	FLARES	OTHER/NOT CLASIFD	MILLIONS OF CUBIC FEET
INDUSTRIAL PROCES	PETROLEUM INDRY	SLUDGE CONVERTER	GENERAL	TONS PROCESSED
INDUSTRIAL PROCES	PETROLEUM INDRY	ASPHALT OXIDIZER	GENERAL	TONS PROCESSED
INDUSTRIAL PROCES	PETROLEUM INDRY	ASPHALT OXIDIZER	OTHER/NOT CLASIFD	TONS PROCESSED
INDUSTRIAL PROCES	PETROLEUM INDRY	FLUID COKING	GENERAL	1000 BARRELS FRESH FEED
INDUSTRIAL PROCES	PETROLEUM INDRY	OTHER/NOT CLASIFD	SPECIFY IN REMARK	TONS PROCESSED
INDUSTRIAL PROCES	PETROLEUM INDRY	OTHER/NOT CLASIFD	SPECIFY IN REMARK	BARRELS-PROCESSED
INDUSTRIAL PROCES	WOOD PRODUCTS	SULFATE PULPNG	BLOWTNK ACCUMULTR	AIR-DRY TONS UNBLEACHED PULP
INDUSTRIAL PROCES	WOOD PRODUCTS	SULFATE PULPNG	WASHRS/SCREENS	AIR-DRY TONS UNBLEACHED PULP
INDUSTRIAL PROCES	WOOD PRODUCTS	SULFATE PULPNG	MULT-EFFECT EVAP	AIR-DRY TONS UNBLEACHED PULP
INDUSTRIAL PROCES	WOOD PRODUCTS	SULFATE PULPNG	RECVY BOLR/DCEVAP	AIR-DRY TONS UNBLEACHED PULP
INDUSTRIAL PROCES	WOOD PRODUCTS	SULFATE PULPNG	SMELT DISSOLV TNK	AIR-DRY TONS UNBLEACHED PULP
INDUSTRIAL PROCES	WOOD PRODUCTS	SULFATE PULPNG	LIME KILNS	AIR-DRY TONS UNBLEACHED PULP
INDUSTRIAL PROCES	WOOD PRODUCTS	SULFATE PULPNG	TURPENTINE CONDSR	AIR-DRY TONS UNBLEACHED PULP
INDUSTRIAL PROCES	WOOD PRODUCTS	SULFATE PULPNG	FLUIDBED CALCINER	AIR-DRY TONS UNBLEACHED PULP
INDUSTRIAL PROCES	WOOD PRODUCTS	SULFATE PULPING	LIQUOR OXIDN TOWR	AIR-DRY TONS UNBLEACHED PULP
INDUSTRIAL PROCES	WOOD PRODUCTS	SULFATE PULPING	OTHER/NOT CLASIFD	AIR-DRY TONS UNBLEACHED PULP
INDUSTRIAL PROCES	WOOD PRODUCTS	SULFITE PULPING	LIQUOR RECOVERY	AIR-DRY TONS UNBLEACHED PULP
INDUSTRIAL PROCES	WOOD PRODUCTS	SULFITE PULPING	SULFITE TOWER	AIR-DRY TONS UNBLEACHED PULP
INDUSTRIAL PROCES	WOOD PRODUCTS	SULFITE PULPING	DIGESTER	AIR-DRY TONS UNBLEACHED PULP
INDUSTRIAL PROCES	WOOD PRODUCTS	SULFITE PULPING	SMELT TANK	AIR-DRY TONS UNBLEACHED PULP
INDUSTRIAL PROCES	WOOD PRODUCTS	SULFITE PULPING	EVAPORATORS	AIR-DRY TONS UNBLEACHED PULP
INDUSTRIAL PROCES	WOOD PRODUCTS	SULFITE PULPING	PULP DIGESTER	TONS AIR DRY PULP
INDUSTRIAL PROCES	WOOD PRODUCTS	SULFITE PULPING	OTHER/NOT CLASIFD	TONS AIR DRY PULP
INDUSTRIAL PROCES	WOOD PRODUCTS	PULPBOARD MFG	PAPERBOARD-GEN	TONS FINISHED PRODUCT
INDUSTRIAL PROCES	WOOD PRODUCTS	PULPBOARD MFG	FIBERBOARD-GEN	TONS FINISHED PRODUCT
INDUSTRIAL PROCES	WOOD PRODUCTS	PULPBOARD MFG	OTHER/NOT CLASIFD	TONS FINISHED PRODUCT
INDUSTRIAL PROCES	WOOD PRODUCTS	PRESSURE TREATING	CREOSOTE	TONS OF WOOD TREATED
INDUSTRIAL PROCES	WOOD PRODUCTS	PRESSURE TREATING	OTHER/NOT CLASIFD	TONS OF WOOD TREATED
INDUSTRIAL PROCES	WOOD PRODUCTS	TALLOIL/ROSIN	GENERAL	TONS OF PRODUCT
INDUSTRIAL PROCES	WOOD PRODUCTS	PLYWOOD/PARTBOARD	VENEER DRYER	TONS PROCESSED
INDUSTRIAL PROCES	WOOD PRODUCTS	PLYWOOD/PARTBOARD	SANDING	TONS PROCESSED
INDUSTRIAL PROCES	WOOD PRODUCTS	PLYWOOD/PARTBOARD	OTHER/NOT CLASIFD	TONS PROCESSED
INDUSTRIAL PROCES	WOOD PRODUCTS	SAWMILL OPERATNS	OTHER/NOT CLASIFD	TONS PROCESSED
INDUSTRIAL PROCES	WOOD PRODUCTS	EXCELSIOR MFG	OTHER/NOT CLASIFD	TONS PROCESSED
INDUSTRIAL PROCES	WOOD PRODUCTS	CORK PROCESSING	OTHER/NOT CLASIFD	TONS PROCESSED
INDUSTRIAL PROCES	WOOD PRODUCTS	FURNITURE MFG	OTHER/NOT CLASIFD	TONS PROCESSED
INDUSTRIAL PROCES	WOOD PRODUCTS	OTHER/NOT CLASIFD	SPECIFY IN REMARK	TONS PROCESSED
INDUSTRIAL PROCES	METAL FABRICATION	IRON/STEEL	MISC HARDWARE	TONS OF PRODUCT
INDUSTRIAL PROCES	METAL FABRICATION	IRON/STEEL	FARM MACHINERY	TONS OF PRODUCT
INDUSTRIAL PROCES	METAL FABRICATION	IRON/STEEL	OTHER/NOT CLASIFD	TONS PROCESSED
INDUSTRIAL PROCES	METAL FABRICATION	PLATING OPERATONS	OTHER/NOT CLASIFD	TONS PLATED
INDUSTRIAL PROCES	METAL FABRICATION	CAN MAKING OPRNS	OTHER/NOT CLASIFD	TONS PRODUCT
INDUSTRIAL PROCES	METAL FABRICATION	OTHER/NOT CLASIFD	SPECIFY IN REMARK	TONS PROCESSED
INDUSTRIAL PROCES	LEATHER PRODUCTS	OTHER/NOT CLASIFD	SPECIFY IN REMARK	TONS PROCESSED
INDUSTRIAL PROCES	TEXTILE MFG	GENERAL FABRICS	YARN PREP/BLEACH	TONS PROCESSED
INDUSTRIAL PROCES	TEXTILE MFG	GENERAL FABRICS	OTHER/NOT SPECIFD	TONS PROCESSED
INDUSTRIAL PROCES	TEXTILE MFG	RUBERIZED FABRICS	OTHER/NOT SPECIFD	TONS PROCESSED
INDUSTRIAL PROCES	TEXTILE MFG	CARPET OPERATNS	OTHER/NOT SPECIFD	TONS PROCESSED

TABLE 2.1-4. (Continued)

NATIONAL EMISSIONS DATA SYSTEM (NEDS)
SOURCE CLASSIFICATION CODE (SCC) REPORT

SCC CATEGORY NAMES

I	II	III	IV	UNITS
INDUSTRIAL PROCES	INPROCESS FUEL	ANTHRACITE COAL	OTHER/NOT CLASIFD	TONS BURNED
INDUSTRIAL PROCES	INPROCESS FUEL	BITUMINOUS COAL	CEMENT KILN	TONS BURNED
INDUSTRIAL PROCES	INPROCESS FUEL	BITUMINOUS COAL	BRICK KILN/DRY	TONS BURNED
INDUSTRIAL PROCES	INPROCESS FUEL	BITUMINOUS COAL	GYPSUM KILN/ETC	TONS BURNED
INDUSTRIAL PROCES	INPROCESS FUEL	BITUMINOUS COAL	COAL DRYERS	TONS BURNED
INDUSTRIAL PROCES	INPROCESS FUEL	BITUMINOUS COAL	OTHER/NOT CLASIFD	TONS BURNED
INDUSTRIAL PROCES	INPROCESS FUEL	RESIDUAL OIL	ASPHALT DRYER	1000 GALLONS BURNED
INDUSTRIAL PROCES	INPROCESS FUEL	RESIDUAL OIL	CEMENT KILN	1000 GALLONS BURNED
INDUSTRIAL PROCES	INPROCESS FUEL	RESIDUAL OIL	LIME KILN	1000 GALLONS BURNED
INDUSTRIAL PROCES	INPROCESS FUEL	RESIDUAL OIL	KAOLIN KILN	1000 GALLONS BURNED
INDUSTRIAL PROCES	INPROCESS FUEL	RESIDUAL OIL	METAL MELTING	1000 GALLONS BURNED
INDUSTRIAL PROCES	INPROCESS FUEL	RESIDUAL OIL	BRICK KILN/DRY	1000 GALLONS BURNED
INDUSTRIAL PROCES	INPROCESS FUEL	RESIDUAL OIL	GYPSUM KILN/ETC	1000 GALLONS BURNED
INDUSTRIAL PROCES	INPROCESS FUEL	RESIDUAL OIL	OTHER/NOT CLASIFD	1000 GALLONS BURNED
INDUSTRIAL PROCES	INPROCESS FUEL	DISTILLATE OIL	ASPHALT DRYER	1000 GALLONS BURNED
INDUSTRIAL PROCES	INPROCESS FUEL	DISTILLATE OIL	CEMENT KILN	1000 GALLONS BURNED
INDUSTRIAL PROCES	INPROCESS FUEL	DISTILLATE OIL	LIME KILN	1000 GALLONS BURNED
INDUSTRIAL PROCES	INPROCESS FUEL	DISTILLATE OIL	KAOLIN KILN	1000 GALLONS BURNED
INDUSTRIAL PROCES	INPROCESS FUEL	DISTILLATE OIL	METAL MELTING	1000 GALLONS BURNED
INDUSTRIAL PROCES	INPROCESS FUEL	DISTILLATE OIL	BRICK KILN/DRY	1000 GALLONS BURNED
INDUSTRIAL PROCES	INPROCESS FUEL	DISTILLATE OIL	GYPSUM KILN/ETC	1000 GALLONS BURNED
INDUSTRIAL PROCES	INPROCESS FUEL	DISTILLATE OIL	OTHER/NOT CLASIFD	1000 GALLONS BURNED
INDUSTRIAL PROCES	INPROCESS FUEL	NATURAL GAS	ASPHALT DRYER	MILLION CUBIC FEET BURNED
INDUSTRIAL PROCES	INPROCESS FUEL	NATURAL GAS	CEMENT KILN	MILLION CUBIC FEET BURNED
INDUSTRIAL PROCES	INPROCESS FUEL	NATURAL GAS	LIME KILN	MILLION CUBIC FEET BURNED
INDUSTRIAL PROCES	INPROCESS FUEL	NATURAL GAS	KAOLIN KILN	MILLION CUBIC FEET BURNED
INDUSTRIAL PROCES	INPROCESS FUEL	NATURAL GAS	METAL MELTING	MILLION CUBIC FEET BURNED
INDUSTRIAL PROCES	INPROCESS FUEL	NATURAL GAS	BRICK KILN/DRYS	MILLION CUBIC FEET BURNED
INDUSTRIAL PROCES	INPROCESS FUEL	NATURAL GAS	GYPSUM KILN ETC	MILLION CUBIC FEET BURNED
INDUSTRIAL PROCES	INPROCESS FUEL	NATURAL GAS	OTHER/NOT CLASIFD	MILLION CUBIC FEET BURNED
INDUSTRIAL PROCES	INPROCESS FUEL	PROCESS GAS	OTHER/NOT CLASIFD	MILLION CUBIC FEET BURNED
INDUSTRIAL PROCES	INPROCESS FUEL	COKE	OTHER/NOT CLASIFD	TONS
INDUSTRIAL PROCES	INPROCESS FUEL	WOOD	OTHER/NOT CLASIFD	TONS BURNED
INDUSTRIAL PROCES	INPROCESS FUEL	OTHER/NOT CLASIFD	SPECIFY IN REMARK	MILLION CUBIC FEET BURNED
INDUSTRIAL PROCES	INPROCESS FUEL	OTHER/NOT CLASIFD	SPECIFY IN REMARK	1000 GALLONS BURNED
INDUSTRIAL PROCES	INPROCESS FUEL	OTHER/NOT CLASIFD	SPECIFY IN REMARK	TONS BURNED
INDUSTRIAL PROCES	OTHER/NOT CLASIFD	SPECIFY IN REMARK		TONS PROCESSED
POINT SC EVAP	CLEANING SOLVENT	DRYCLEANING	PERCHLORETHYLENE	TONS CLOTHES CLEANED
POINT SC EVAP	CLEANING SOLVENT	DRYCLEANING	STODDARD	TONS CLOTHES CLEANED
POINT SC EVAP	CLEANING SOLVENT	DEGREASING	STODDARD	TONS SOLVENT USED
POINT SC EVAP	CLEANING SOLVENT	DEGREASING	OTHER/NOT CLASIFD	TONS SOLVENT USED
POINT SC EVAP	CLEANING SOLVENT	OTHER/NOT CLASIFD	SPECIFY IN REMARK	TONS SOLVENT USED
POINT SC EVAP	SURFACE COATING	PAINT	GENERAL	TONS COATING
POINT SC EVAP	SURFACE COATING	VARNISH/SHELLAC	GENERAL	TONS COATING
POINT SC EVAP	SURFACE COATING	LAQUER	GENERAL	TONS COATING
POINT SC EVAP	SURFACE COATING	ENAMEL	GENERAL	TONS COATING
POINT SC EVAP	SURFACE COATING	PRIMER	GENERAL	TONS COATING
POINT SC EVAP	SURFACE COATING	OTHER/NOT CLASIFD	SPECIFY IN REMARK	TONS COATING
POINT SC EVAP	PETROLEUM STG	FIXED ROOF	BREATHING-PRODUCT	1000 GALLONS STORAGE CAPACITY
POINT SC EVAP	PETROLEUM STG	FIXED ROOF	BREATHING CRUDE	1000 GALLONS STORAGE CAPACITY
POINT SC EVAP	PETROLEUM STG	FIXED ROOF	WORKING-PRODUCT	1000 GALLONS THROUGHPUT
POINT SC EVAP	PETROLEUM STG	FIXED ROOF	WORKING CRUDE	1000 GALLONS THROUGHPUT
POINT SC EVAP	PETROLEUM STG	FLOATING ROOF	BREATHING PRODUCT	1000 GALLONS STORAGE CAPACITY
POINT SC EVAP	PETROLEUM STG	FLOATING ROOF	WORKING-PRODUCT	1000 GALLONS THROUGHPUT
POINT SC EVAP	PETROLEUM STG	FLOATING ROOF	BREATHING-CRUDE	1000 GALLONS STORAGE CAPACITY
POINT SC EVAP	PETROLEUM STG	FLOATING ROOF	WORKING-CRUDE	1000 GALLONS THROUGHPUT
POINT SC EVAP	PETROLEUM STG	OTHER/NOT CLASIFD	SPECIFY IN REMARK	1000 GAL STORED
POINT SC EVAP	MISC ORGANIC STOR	OTHER/NOT CLASIFD	SPECIFY IN REMARK	TONS STORED
POINT SC EVAP	PRINTING PRESS	DRYERS	GENERAL	TONS SOLVENT
POINT SC EVAP	MISC HC EVAP	OTHER/NOT CLASIFD	SPECIFY IN REMARK	TONS PROCESSED
SOLID WASTE	GOVERNMENT	MUNICIPAL INCIN	MULTIPLE CHAMBER	TONS BURNED
SOLID WASTE	GOVERNMENT	MUNICIPAL INCIN	SINGLE CHAMBER	TONS BURNED
SOLID WASTE	GOVERNMENT	OPEN BURNING DUMP	GENERAL	TONS BURNED
SOLID WASTE	GOVERNMENT	OPEN BURNING DUMP	LANDSCAPE/PRUNING	TONS BURNED
SOLID WASTE	GOVERNMENT	OPEN BURNING DUMP	JET FUEL	HUNDREDS OF GALLONS
SOLID WASTE	GOVERNMENT	INCINERATOR	PATHOLOGICAL	TONS BURNED
SOLID WASTE	GOVERNMENT	INCINERATOR	SLUDGE	TONS DRY SLUDGE
SOLID WASTE	GOVERNMENT	INCINERATOR	CONICAL	TONS BURNED
SOLID WASTE	GOVERNMENT	INCINERATOR	OTHER/NOT CLASIFD	TONS BURNED
SOLID WASTE	GOVERNMENT	AUX.FUEL/NO EMSNS	RESIDUAL OIL	1000 GALLONS
SOLID WASTE	GOVERNMENT	AUX.FUEL/NO EMSNS	DISTILLATE OIL	1000 GALLONS
SOLID WASTE	GOVERNMENT	AUX.FUEL/NO EMSNS	NATURAL GAS	MILLION CUBIC FEET
SOLID WASTE	GOVERNMENT	AUX.FUEL/NO EMSNS	LPG	1000 GALLONS
SOLID WASTE	GOVERNMENT	AUX.FUEL/NO EMSNS	OTHER/NOT CLASIFD	MILLION CUBIC FEET
SOLID WASTE	GOVERNMENT	AUX.FUEL/NO EMSNS	OTHER/NOT CLASIFD	1000 GALLONS
SOLID WASTE	GOVERNMENT	AUX.FUEL/NO EMSNS	OTHER/NOT CLASIFD	TONS
SOLID WASTE	COMM-INST	INCINERATOR GEN	MULTIPLE CHAMBER	TONS BURNED
SOLID WASTE	COMM-INST	INCINERATOR GEN	SINGLE CHAMBER	TONS BURNED
SOLID WASTE	COMM-INST	INCINERATOR GEN	CONTROLLED AIR	TONS BURNED
SOLID WASTE	COMM-INST	INCINERATOR GEN	CONICAL REFUSE	TONS BURNED
SOLID WASTE	COMM-INST	INCINERATOR GEN	CONICAL WOOD	TONS BURNED
SOLID WASTE	COMM-INST	OPEN BURNING	WOOD	TONS BURNED
SOLID WASTE	COMM-INST	APARTMENT INCIN	FLUE FED	TONS BURNED
SOLID WASTE	COMM-INST	APARTMENT INCIN	FLUE FED-MODIFIED	TONS BURNED
SOLID WASTE	COMM-INST	INCINERATOR	PATHOLOGICAL	TONS BURNED
SOLID WASTE	COMM-INST	INCINERATOR	SLUDGE	TONS DRY SLUDGE
SOLID WASTE	COMM-INST	INCINERATOR	OTHER/NOT CLASIFD	TONS BURNED
SOLID WASTE	COMM-INST	AUX.FUEL/NO EMSNS	RESIDUAL OIL	1000 GALLONS
SOLID WASTE	COMM-INST	AUX.FUEL/NO EMSNS	DISTILLATE OIL	1000 GALLONS
SOLID WASTE	COMM-INST	AUX.FUEL/NO EMSNS	NATURAL GAS	MILLION CUBIC FEET
SOLID WASTE	COMM-INST	AUX.FUEL/NO EMSNS	LPG	1000 GALLONS
SOLID WASTE	COMM-INST	AUX.FUEL/NO EMSNS	OTHER/NOT CLASIFD	MILLION CUBIC FEET
SOLID WASTE	COMM-INST	AUX.FUEL/NO EMSNS	OTHER/NOT CLASIFD	1000 GALLONS
SOLID WASTE	COMM-INST	AUX.FUEL/NO EMSNS	OTHER/NOT CLASIFD	TONS
SOLID WASTE	INDUSTRIAL	INCINERATOR	MULTIPLE CHAMBER	TONS BURNED
SOLID WASTE	INDUSTRIAL	INCINERATOR	SINGLE CHAMBER	TONS BURNED
SOLID WASTE	INDUSTRIAL	INCINERATOR	CONTROLLED AIR	TONS BURNED
SOLID WASTE	INDUSTRIAL	INCINERATOR	CONICAL REFUSE	TONS BURNED
SOLID WASTE	INDUSTRIAL	INCINERATOR	CONICAL WOOD	TONS BURNED
SOLID WASTE	INDUSTRIAL	INCINERATOR	OPEN PIT	TONS OF WASTE

TABLE 2.1-4. (Concluded)

NATIONAL EMISSIONS DATA SYSTEM (NEDS)
SOURCE CLASSIFICATION CODE (SCC) REPORT

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                                  SCC CATEGORY NAMES
                                  ******************
       I                   II              III                IV                  UNITS

SOLID WASTE        |INDUSTRIAL        |OPEN BURNING      |WOOD              |TONS BURNED
SOLID WASTE        |INDUSTRIAL        |OPEN BURNING      |REFUSE            |TONS BURNED
SOLID WASTE        |INDUSTRIAL        |OPEN BURNING      |AUTO BODY COMPTS  |TONS BURNED
SOLID WASTE        |INDUSTRIAL        |AUTO BODY INCINAT|W/O AFTERBURNER    |AUTOS BURNED
SOLID WASTE        |INDUSTRIAL        |AUTO BODY INCINAT|W/ AFTERBURNER     |AUTOS BURNED
SOLID WASTE        |INDUSTRIAL        |RAIL CAR BURNING |OPEN               |CARS BURNED
SOLID WASTE        |INDUSTRIAL        |INCINERATOR       |SLUDGE            |TONS DRY SLUDGE
SOLID WASTE        |INDUSTRIAL        |INCINERATOR       |OTHER/NOT CLASIFD|TONS BURNED
SOLID WASTE        |INDUSTRIAL        |AUX.FUEL/NO EMSNS|RESIDUAL OIL       |1000 GALLONS
SOLID WASTE        |INDUSTRIAL        |AUX.FUEL/NO EMSNS|DISTILLATE OIL     |1000 GALLONS
SOLID WASTE        |INDUSTRIAL        |AUX.FUEL/NO EMSNS|NATURAL GAS        |MILLION CUBIC FEET
SOLID WASTE        |INDUSTRIAL        |AUX.FUEL/NO EMSNS|PROCESS GAS        |MILLION CUBIC FEET
SOLID WASTE        |INDUSTRIAL        |AUX.FUEL/NO EMSNS|L P G              |1000 GALLONS
SOLID WASTE        |INDUSTRIAL        |AUX.FUEL/NO EMSNS|OTHER/NOT CLASIFD|MILLION CUBIC FEET
SOLID WASTE        |INDUSTRIAL        |AUX.FUEL/NO EMSNS|OTHER/NOT CLASIFD|1000 GALLONS
SOLID WASTE        |INDUSTRIAL        |AUX.FUEL/NO EMSNS|OTHER/NOT CLASIFD|TONS
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Other	Lab Analysis	Other	Not Classified	Specify in Remarks

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TABLE 2.1-5. TWO-LETTER STATE ABBREVIATIONS

Alabama	AL	Missouri	MO
Alaska	AK	Montana	MT
Arizona	AZ	Nebraska	NE
Arkansas	AR	Nevada	NV
California	CA	New Hampshire	NH
Canal Zone	CZ	New Jersey	NJ
Colorado	CO	New Mexico	NM
Connecticut	CT	New York	NY
Delaware	DE	North Carolina	NC
District of Columbia	DC	North Dakota	ND
Florida	FL	Ohio	OH
Georgia	GA	Oklahoma	OK
Guam	GU	Oregon	OR
Hawaii	HI	Pennsylvania	PA
Idaho	ID	Puerto Rico	PR
Illinois	IL	Rhode Island	RI
Indiana	IN	South Carolina	SC
Iowa	IA	South Dakota	SD
Kansas	KS	Tennessee	TN
Kentucky	KY	Texas	TX
Louisiana	LA	Utah	UT
Maine	ME	Vermont	VT
Maryland	MD	Virginia	VA
Massachusetts	MA	Virgin Islands	VI
Michigan	MI	Washington	WA
Minnesota	MN	West Virginia	WV
Mississippi	MS	Wisconsin	WI
		Wyoming	WY

TABLE 2.1-6. CONTROL DEVICE DESCRIPTION NOMENCLATURE

Generic Type:

- Cyclone
- ESP
- Wet scrubber
- Fabric filter
- Other
- None

Device Class:

- Conventional
- Novel
- Prototype
- Pilot scale

TABLE 2.1-7. DEVICE CATEGORY KEY WORDS

ESP	Cyclone	Wet Scrubber	Fabric Filter
1. Wet	1. Single	1. Plate	1. Continuously cleaned
2. Dry	2. Multiple	2. Massive packing	2. Intermittently cleaned
3. Hotside	3. Recirculating	3. Fibrous packing	3. Reverse air
4. Coldside	4. Mech. rotor	4. Preformed spray	4. Mechanical shake or vibrate
5. Plate		5. Gas atomized spray	5. Hi pressure air
6. Pipe		6. Centrifugal	6. Low pressure air
7. Hi voltage		7. Baffle	7. Other
8. Low voltage		8. Impingement and entrainment	
9. Single chamber		9. Mechanically aided	
10. Double chamber		10. Moving bed	
11. Other		11. Combination	

TABLE 2.1-8. DESIGN SPECIFICATION TYPE

ESP	Units	Cyclone	Units
Design volume flow rate	DNm^3/sec	Design volume flow rate	DNm^3/sec
Design ΔP	cm WG	Design ΔP	cm WG
Design temperature	°C	Design temperature	°C
Gross mass design efficiency	%	Gross mass design efficiency	%
Design inlet grain loading	μg/m^3	Design inlet grain loading	μg/m^3
Total power consumption	kWh	Total power consumption	kWh
Bulk linear velocity	m/s	Entrance velocity	m/s
Number of sections	number	Number of tubes	number
Design applied voltage	volts	Cyclone diameter	m
Aspect ratio	dimensionless	Length/diameter ratio	dimensionless
Specific collecting area	m^2/m^3		
Plate area	m^2		

TABLE 2.1-8. (Concluded)

Scrubber	Units	Fabric Filter	Units
Design volume flow rate	DNm^3/sec	Design volume flow rate	DNm^3/sec
Design ΔP	cm WG	Design ΔP	cm WG
Design temperature	°C	Design temperature	°C
Gross mass design efficiency	%	Gross mass design efficiency	%
Design inlet grain loading	$\mu g/m^3$	Design inlet grain loading	$\mu g/m^3$
Total power consumption	kWh	Total power consumption	kWh
Inlet gas velocity	m/s	Design air/cloth ratio	m^3/m^2 min
Demister type	text	Number of compartments	number
Design liquid loading	ℓ/m^3	Bag composition	text
Entrainment separator type	text	Bag length	m

TABLE 2.1-9. DEVICE OPERATING PARAMETER TYPE

ESP	**Units**	**Cyclone**	**Units**
Operating ΔP	cm WG	Operating ΔP	cm WG
Gross mass operating efficiency	%	Gross mass operating efficiency	%
Power consumption	kWh	Power consumption	kWh
Bulk linear velocity	m/s	-	
Applied voltage	volts	-	
Gas pretreatment	text	Gas pretreatment	text
Rapping frequency	number/min	-	
Spark rate	number/min	-	
Current density	(nA/cm^2)	-	
Liquid used	text	-	
Liquid loading	ℓ/min	-	
Scrubber	**Units**	**Fabric filter**	**Units**
Operating ΔP	cm WG	Operating ΔP	cm WG
Gross mass operating efficiency	%	Gross mass operating efficiency	%
Total power consumption	kWh	Total power consumption	kWh
-		Bag composition	text
Gas pretreatment	text	gas pretreatment	text
Recycle ratio	number	Cleaning frequency	number/min
Liquor recycle characteristics	text	Air/cloth ratio	m^3/m^2 min
Effluent liquid treatment requirement	text	Cloth construction	text
Scrubbing liquor type	name	Cloth weight	gm/m^2
Liquor loading	ℓ/m^3	Cloth thickness	cm

TABLE 2.1-10. BIOASSAY TEST TYPE

The following data may be used for Bioassay Test Type:

CYTOTOXICITY - ANIMAL

CYTOTOXICITY - HUMAN

MUTAGENICITY - (BACTERIAL STRAIN)

INHALATION

SKIN PAINTING

NEONATAL - MOUSE

TABLE 2.1-11. SAROAD PARTICULATE POLLUTANT CODES

	Code[a]	Chemical Pollutant	Code	Chemical Pollutant	Code	Chemical Pollutant	Code	Chemical Pollutant	Code
General	1	Bromine	2109	Indium	2131	Platinum	2153	Thulium	2175
Particulate (total)	1101	Cadmium	2110	Manganese	2132	Selenium	2154	Rubidium	2176
Organic (total) fraction	1102	Calcium	2111	Iridium	2133	Praseodymium	2155	Ruthenium	2177
Benzene soluble organic fraction	1103	Chromium	2112	Molybdenum	2134	Protactinium	2156	Tungsten	2178
Polynuclear hydrocarbons (heterocyclic)	1104	Cobalt	2113	Krypton	2135	Radium	2157	Uranium	2179
Water soluble organics	1105	Copper	2114	Nickel	2136	Rhenium	2158	Potassium	2180
Aliphatic fraction	1110	Chlorine	2115	Helium	2137	Rhodium	2159	Xenon	2181
Aromatic fraction	1111	Carbon	2116	Lithium	2138	Tin	2160	Ytterbium	2182
Inorganic fraction	1113	Cerium	2117	Lutetium	2139	Titanium	2161	Yttrium	2183
Hydrocarbon fraction	1114	Cesium	2118	Magnesium	2140	Samarium	2162	Sodium	2184
Aldehyde fraction	1115	Dysprosium	2119	Iodine	2141	Scandium	2163	Zirconium	2185
Organic acid fraction	1116	Erbium	2120	Mercury	2142	Vanadium	2164	Group VII Compounds and Ions	22
Inorganic	2	Europium	2121	Gold	2143	Silicon	2165	Bromide ion	2201
Total element (free and combined)	21	Fluorine	2122	Neodymium	2144	Silver	2166	Fluoride ion	2202
Aluminum	2101	Gadolinium	2123	Neon	2145	Zinc	2167	Chloride ion	2203
Antimony	2102	Gallium	2124	Lanthanum	2146	Strontium	2168	Iodide ion	2204
Arsenic	2103	Germanium	2125	Niobium	2147	Sulfur	2169	Chlorate ion	2205
Argon	2104	Iron	2126	Nitrogen	2148	Tantalum	2170	Perchlorate ion	2206
Beryllium	2105	Hafnium	2127	Osmium	2149	Tellurium	2171	Bromate ion	2207
Bismuth	2106	Lead	2128	Oxygen	2150	Terbium	2172	Sodium chloride	2210
Barium	2107	Holmium	2129	Palladium	2151	Thallium	2173	Potassium chloride	2211
Boron	2108	Hydrogen	2130	Phosphorus	2152	Thorium	2174		

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[a] These codes are identical to the last four digits of the SAROAD pollutant codes for suspended, respirable, and settled particulates, found in the SAROAD PARAMETER CODING MANUAL (APTD-0633).

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TABLE 2.1-11. (Continued)

Chemical Pollutant	Code
Calcium chloride	2212
Ammonium chloride	2213
Aluminum chloride	2214
Sodium bromide	2230
Potassium bromide	2231
Sodium iodide	2250
Potassium iodide	2251
Potassium fluoride	2270
Sodium fluoride	2271
Sodium fluorosilicate	2275
Calcium fluorosilicate	2276
Group V Compounds and Ions	23
Ammonium ion	2301
Cyanide ion	2304
Nitrate ion	2306
Nitrite ion	2309
Hydrazine	2310
Hydrazoic acid	2311
Ammonium chloride	2320
Ammonium nitrate	2321
Ammonium sulfate	2322
Phosphoric acid	2340
Calcium phosphate	2341
Phosphorous pentasulfide	2342
Phosphorus pentoxide	2343
Phosphate ion	2345
Hydrogen phosphate ion	2346
Dihydrogen phosphate ion	2347
Group VI Compounds and Ions	24
Sulfide ion	2401
Sulfuric acid	2402
Sulfate ion	2403
Thiosulfate ion	2404
Sulfite ion	2410
Ferrous sulfide	2411
Ferric sulfide	2412
Ferrous sulfate	2413
Ferric sulfate	2414
Barium sulfate	2415
Chromium trioxide	2417
Sodium dichromate	2418
Zinc oxide	2430
Aluminum oxide	2431
Water	2450
Group IV Compounds and Ions	25
Carbonate ion	2501
Bicarbonate ion	2502
Carbon boride	2510
Silicon carbide	2511
Silicate ion	2550
Silicon dioxide	2551
Acids and Bases	26
Total acidity H+	2601
Hydrogen ion concentration pH	2602
Nitric acid	2605
Hydrochloric acid	2606
Total alkalinity	2650
Hydroxide ion concentration	2651
Calcium hydroxide	2653
Organo-Metallic Compounds and Ions	27
Miscellaneous	28
Aliphatic Compounds	6
Gross hydrocarbons	61
Hydrocarbons	62
Heptane	6201
Octane	6202
Nonane	6203
Decane	6204
Undecane	6205
Dodecane	6206
Tridecane	6207
Tetradecane	6208
Pentadecane	6209
Hexadecane	6210
Heptadecane	6211
Octadecane	6212
Nonadecane	6213
Eicosane	6214
Hemeicosane	6215
Docosane	6216
Tricosane	6217
Tetracosane	6218
Pentacosane	6219
Hexacosane	6220
Heptacosane	6221
Octacosane	6222
Cyclohexane	6223
Cycloheptane	6224
Cyclooctane	6225
Heptene-1	6226
Octene-1	6227
Alcohols and Ethers	63
Butyl alcohol	6301
iso-Butyl alcohol	6302
sec-Butyl alcohol	6303
tert-Butyl alcohol	6304
n-Amyl alcohol	6305
iso-Amyl alcohol	6306
tert-Amyl alcohol	6307
n-Hexyl alcohol	6308
Cyclohexanol	6309
n-Octyl alcohol	6310
Capryl alcohol (octanol-2)	6311
Decyl alcohol	6312
Lauryl alcohol	6313
Myristyl alcohol	6314
Cetyl alcohol	6315
Stearyl alcohol	6316
Di-*n*-butyl ether	6340
Di-*n*-amyl ether	6341
Di-*iso*-amyl ether	6342
Di-*n*-Hexyl ether	6343
Di-chloromethyl ether	6344

TABLE 2.1-11. (Continued)

Chemical Pollutant	Code	Chemical Pollutant	Code	Chemical Pollutant	Code	Chemical Pollutant	Code	Chemical Pollutant	Code
Di-(β-chloroethyl) ether	6346	Glycolic acid	6418	Heptaldehyde	6502	Hexamethylenediamine	6707	Ethylbenzene	7103
Ethylene glycol dimethyl ether	6347	Lactic acid	6419	Hexanone-2	6504	Ethanolamine	6708	n-Propylbenzene	7104
Divinyl ether	6348	Methoxyacetic acid	6420	Hexanone-3	6505	Diethanolamine	6709	iso-Propylbenzene	7105
Diallyl ether	6349	Thioglycolic acid	6421	Di-n-propyl ketone	6506	Triethanolamine	6710	n-Butylbenzene	7106
Carboxylic Acids and Esters	64	Cyanoacetic acid	6422	Di-iso-propyl ketone	6507	Acrylonitrile	6711	sec-Butylbenzene	7107
Propionic acid	6401	Glyoxylic acid	6423	Di-iso-butyl ketone	6508	Halogen Compounds	68	tert-Butylbenzene	7108
N-Butyric acid	6402	Acrylic acid	6425	Di-n-amyl ketone	6509	Methylene iodide	6801	Styrene	7109
iso-Bytyric acid	6403	Vinylacetic acid	6426	Stearone	6510	Bromoform	6802	Allylbenzene	7110
n-Valeric acid	6404	Phenylacetic acid	6427	Chloroacetone	6511	Carbon tetrabromide	6803	o-Xylene	7111
Trimethylacetic acid	6405	Formic acid	6428	Dichloroacetone	6512	Ethylene dibromide	6804	m-Xylene	7112
Caproic acid	6406	Acetic acid	6429	Acetylacetone	6513	1,1-Dibromoethane	6805	p-Xylene	7113
n-Heptylic acid	6407	Crotonic acid	6430	Mesityl oxide	6514	1,1,2,2-Tetrachloroethane	6806	o-Ethyltoluene	7114
Caprylic acid	6408	Oxalic acid	6431	Phorone	6515	Hexachloroethane	6807	m-Ethyltoluene	7115
Pelargonic acid	6409	Malonic acid	6432	Cyclohexanone	6516	1,3-Dibromopropane	6808	p-Ethyltoluene	7116
Fluoroacetic acid	6410	Succinic acid	6433	Acrolein	6517	1,4-Dibromobutane	6809	p-Cymene	7117
Chloroacetic acid	6411	Glutaric acid	6434	Other Oxygen Compounds	66	1,5-Dibromopentane	6810	o-Diethylbenzene	7118
Bromoacetic acid	6412	Adipic acid	6435	Nitrogen Compounds	67	1,6-Dibromohexane	6811	m-Diethylbenzene	7119
Iodoacetic acid	6413	Pimelic acid	6436	Tri-n-propylamine	6701	Miscellaneous	69	p-Diethylbenzene	7120
Dichloroacetic acid	6414	Suberic acid	6437	Hexylamine	6702	Aromatic Compounds	7	1,2,3-Trimethylbenzene (hemimellitene)	7121
Trichloroacetic acid	6415	Azelaic acid	6438	Laurylamine	6703	Simple and gross hydrocarbons	71	1,2,4-Trimethylbenzene (pseudocumene)	7122
α-Chloropropionic acid	6416	Sebacic acid	6439	Trimethylenediamine	6704	Benzene	7101		
β-Chloropropionic acid	6417	Aldehydes and Ketones	65	Tetramethylenediamine	6705	Toluene	7102		
		Caproaldehyde	6501	Pentamethylenediamine	6706				

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TABLE 2.1-11. (Continued)

Chemical Pollutant	Code
1,3,5-Trimethylbenzene (mesitylene)	7123
1,2,3,4-Tetramethylbenzene (prehnitene)	7124
1,2,3,5-Tetramethylbenzene (isodurene)	7125
1,2,4,5-Tetramethylbenzene (durene)	7126
Pentamethylbenzene	7127
Hexamethylbenzene	7128
1,3,5-Triethylbenzene	7129
Diphenylmethane	7131
Triphenylmethane	7132
Tetraphenylmethane	7133
Stilbene	7134
1,1-Diphenylethane	7135
1,2-Diphenylethane	7136
Diphenyl	7137
p-Terphenyl	7138
p-Quaterphenyl	7139
1,3,5-Triphenylbenzene	7140
Naphtalene	7141
α-Methylnaphthalene	7142
β-Methylnaphthalene	7143
Indene	7145
Azulene	7146
Acenaphthene	7147
Acenaphthalene	7148
Fluorene	7149
Phenanthrene	7150
Anthracene	7151
2-Methylanthracene	7152
Complex Hydrocarbons	72
Fluoranthene	7201
8-Methylfluoranthene	7202
Pyrene	7204
1-Methylpyrene	7205
4-Methylpyrene	7206
2,7-Dimethylpyrene	7207
Chrysene	7208
Anthanthrene	7210
Coronene	7211
Perylene	7212
Naphthacene	7213
Benzo(c)phenanthrene	7214
Benzo(a)anthracene	7215
11-h Benzo(b)fluorene	7216
11-h Benzo(a)fluorene	7217
7-h Benzo(c)fluorene	7218
Dibenzo(a,i)fluorene	7219
Benzo(b)fluoranthrene	7220
Benzo(g,h,i)-fluoranthene	7221
Benzo(j)fluoranthene	7222
Benzo(k)fluoranthene	7223
Benzo(e)pyrene	7224
Naphtho(2,3-a)pyrene	7226
Dibenzo(a,e)pyrene	7227
Dibenzo(a,i)pyrene	7228
Dibenzo(a,h)pyrene	7229
Dibenzo(b,h)phenanthrene	7230
Dibenzo(a,h)-anthracene	7231
Tribenzo(a,c,h)-anthracene	7232
Benzo(a)naphthacene	7233
Dibenzo(a,l)-naphthacene	7234
Dibenzo(a,j)-naphthacene	7235
Dibenzo(a,c)-naphthacene	7236
Benzo(g,h,i)-perylene	7237
Dibenzo(b,p,g,r)-perylene	7238
Benzo(a)pyrene	7242
Phenols and Ethers	73
o-Cresol	7301
m-Cresol	7302
p-Cresol	7303
o-Chlorophenol	7304
m-Chlorophenol	7305
p-Chlorophenol	7306
o-Bromophenol	7307
m-Bromophenol	7308
p-Bromophenol	7309
o-Nitrophenol	7310
m-Nitrophenol	7311
p-Nitrophenol	7312
2,4-Dinitrophenol	7313
3,5-Dinitrophenol	7314
Resorcinol	7315
Hydroquinone	7316
Catechol	7317
Pyrogallol	7318
Phloroglucinol	7319
Anisole	7340
Phenetole	7341
Diphenyl ether	7342
o-anisidine	7343
p-Anisidine	7344
Carboxylic Acids and Esters	74
Aldehydes and Ketones	75
Xanthen-9-one	7501
7h-Benzo(d,e)-anthracene-7-one-(benzanthrone)	7502
Phenalen-1-one	7503
Other Oxygen Compounds	76
Nitrogen Compounds	77
Aniline	7701
o-Phenylenediamine	7702
m-Phenylenediamine	7703
p-Phenylenediamine	7704
o-Anisidine	7705
p-Anisidine	7706
o-Chloroaniline	7707
m-Chloroaniline	7708

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TABLE 2.1-11. (Concluded)

Chemical Pollutant	Code
p-Chloroaniline	7709
o-Toluidine	7710
m-Toluidine	7711
p-Toluidine	7712
Diphenylamine	7713
Triphenylamine	7714
Benzidine	7715
Halogen Compounds	78
Miscellaneous	79
Heterocyclic Compounds	8
Nitrogen Compounds	81
Pyridine	8101
α-Picoline	8102
β-Picoline	8103
γ-Picoline	8104
Quinoline	8105
Isoquinoline	8106
Quinaldine	8107
Indole	8108
Acridine	8109
Carbazole	8110
Benzo(f)quinoline	8111
Benzo(h)quinoline	8112
Phenanthridine	8113
Benz(a)acridine	8114
Benz(c)acridine	8115
11h-Benzo(a)carbazole	8116
5h-benzo(b)carbazole	8117
7h-Benzo(b)carbazole	8118
Dibenz(a,h)acridine	8119
Dibenz(a,j)acridine	8120
Benzo(1,m,n)phenanthridine	8121
Indeno(1,2,3-i,j)-isoquinoline	8122
9-Acridanone	8123
Oxygen Compounds	82
Benzofuran	8201
Dibenzofuran	8202
Furfural	8203
Sulfur Compounds	83
Nitrogen and Oxygen Compounds	84
Sulfur and Oxygen Compounds	85
Sulfur and Nitrogen Compounds	86
Other	87

TABLE 2.1-12. LIST OF CHEMICAL ANALYSIS CODES

Analysis Method	Alphabetic Code
1. Atomic absorption (flame or flameless)	A
2. Chemiluminescence	B
3. Conductametric method (specify in comments)	C
4. Colorimetric method (specify in comments)	D
5. Electrometric method (coulometry, potentiometry, etc.)	E
6. Flame ionization	F
7. Gravimetric method (specify in comments)	G
8. Infrared absorption (IR)	I
9. Nondispersive infrared absorption	J
10. Gas chromatography	K
11. Thin-layer chromatography	L
12. Nuclear magnetic resonance (NMR)	M
13. Neutron activation method	N
14. Photometric method (e.g., "flame;" specify in comments)	P
15. Beta gauge (Carbon-12)	Q
16. Mass spectrographic method (e.g., "spark-source;" specify in comments)	R
17. Emission spectrographic method (e.g., muffle furnace; specify in comments)	S
18. Titrimetric (specify in comments)	T
19. Turbidimetric (e.g., pH meter; specify in comments)	U
20. "Wet Chemistry" method (e.g., Jacobs Method; specify in comments)	W
21. Optical evaluation method (e.g., reflectance, transmittance; specify in comments)	X
22. Other (specify in comments)	Z

TABLE 2.1-13. STANDARD NOMENCLATURE FOR MEASUREMENT EQUIPMENT

Generic Class	Type	Description
Impactor	BRINKS BMS-11 IMPACTOR	Conventional Brinks sampler with a precyclone having a 7 μm cut size
	ANDERSEN MODEL II IMPACTOR	Andersen stack sampler with stainless steel collection plates
	ANDERSEN MODEL III IMPACTOR	Modified Andersen sampler with glass fiber filter collection surface
	ANDERSEN MODEL IV IMPACTOR	Modified Andersen sampler with glass fiber filter collection surfaces and a cyclone precollector
	UW MARK III IMPACTOR	University of Washington cascade impactor manufactured by Pollution Control Systems, Inc.
	TAG IMPACTOR	Multiple slit cascade impactor manufactured by Environmental Research Corporation or Sierra Instruments, Inc.
	OTHER IMPACTOR	Any other impactor, including modified versions of the above
Optical particle counter	ROYCO MODEL - OPC	Manufactured by Royco Instruments, Inc., Menlo Park, California
	CLIMET MODEL - OPC	Manufactured by Climet Instruments, Inc., Sunnyvale, California
	BAUSCH & LOMB MODEL 40-1 - OPC	Manufactured by Bausch & Lomb, Rochester, New York
	OTHER - OPC	As necessary

TABLE 2.1-13. (Concluded)

Generic Class	Type	Description
Condensation nuclei counter	GENERAL ELECTRIC - CNC	Manufactured by General Electric, Pittsfield, Massachusetts
	RICH 100 - CNC	
	OTHER - CNC	
Diffusion battery	CLUSTER TUBE - DIFF BATTERY	
	RECTANGULAR TUBE - DIFF BATTERY	
	CHS - DIFF BATTERY	of David Sinclair design with collimated hole structure
	WIRE SCREEN DIFF BATTERY	Manufactured by Thermo-Systems, Inc.
Electrical analyzer	WHITBY ELECTRICAL ANALYZER, MODEL 3030	Manufactured by Thermo-Systems, Inc.
Miscellaneous	MOBILITY ANALYZER	
	CYCLONES	
	COULTER COUNTER	
	ELECTRON MICROSCOPE	
	OPTICAL MICROSCOPE	
Other		Measuring equipment not otherwise classified

2.2 General Instructions for FPEIS Data Input Forms

The FPEIS Standard Data Input forms are given in Figure 2.2-1. Certain instructions that apply to data coding include the following:

- Zeros are treated as numbers. Blank spaces in a field indicate either a lack of data or that the pertinent data have been coded for the preceding test subseries or test run. All numeric data shall be right-justified and all alphanumeric data shall be left-justified, except where noted otherwise.

- Only specified alphabetical or numerical characters are allowed to be entered in the columns. No unusual marks are to be made in the spaces. No data field headings are to be changed and only data appropriate to the field are to be entered. This rule prevents unnecessary keypunching errors in processing the forms.

- Only the allowed coding values may be entered in columns that require coding symbols.

- Instructions for filling out each card on the form are quite specific and were designed to apply to the large majority of source/control system combinations. Nevertheless, it is recognized that assumptions must occasionally be made to reflect the real, physical situation for an unusual source/control system combination. Care should be taken to make reasonable assumptions that most nearly correspond to the true circumstances for the source/control system combination tested.

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- If there are more than one source emitting into a control system, the description of one should be given and other data should be indicated in the test series remarks. The criteria is to note the source parameters which affect the physical, chemical, and biological nature of the particulate rather than quantity of particulate.

- When more than one control device is used, use a separate data input Form No. 2 for each control device used. Be sure to give the control device number. Up to three (3) control devices in series may be coded for a given source gas stream.

- When more than one test run was made, use a separate data input Form No. 6 for each run. Be sure to indicate the measurement instrument/method number.

- Whenever the data exceeds the available space, it can be given in the remarks or comments of the appropriate level (i.e., test series, subseries, or run remarks). In such cases, however, both the data element and its value should be given and not just the data element value.

- Whenever there are pertinent data for which no data element exists, such data can be given in the remarks of the appropriate level.

- Whenever text items are being completed, care should be exercised to leave no blank cards between completed cards. Also, try to make the text as brief as possible through the use of abbreviations, precise words, and elimination of redundant words. The text should always start at the left most column (i.e., left-justified). Table 2.2-1 gives a list of commonly accepted abbreviations which may be used.

- The small triangle between columns represents the decimal point. Enter the fractional decimal digits to the right of the triangle. When ± is indicated at the top of the column, enter either + or - as appropriate.

- Leave all the hatched-out portions blank.

- The following identification data elements must be filled on first card of every section (data group). There may be no blanks.

Data Element	Card Columns	Instructions
Test series number	1-5	Enter on all forms.
Subseries number	6-8	Enter on Forms Nos. 4 through 6. Blank on Forms Nos. 1 and 2.
Run number	9-10	Enter only on Form No. 6. Blank on Forms Nos. 1 through 5.

Detailed instructions are given in Section 2.3 for completing each card in the input forms.

TABLE 2.2-1. ABBREVIATIONS FOR STREET DESIGNATORS AND FOR WORDS THAT APPEAR FREQUENTLY IN PLACE NAMES

Word	Abbreviation	Word	Abbreviation	Word	Abbreviation	Word	Abbreviation
Academy	ACAD	Expressway	EXPY	Lane	LN	San	SN
Agency	AGNCY	Extended	EXT	Light	LGT	Santa	SN
Airport	ARPRT	Extension	EXT	Little	LTL	Santo	SN
Alley	ALY	Fall	FL	Loaf	LF	School	SCH
Annex	ANX	Falls	FLS	Locks	LCKS	Seminary	SMNRY
Arcade	ARC	Farms	FRMS	Lodge	LDG	Shoal	SHL
Arsenal	ARSL	Ferry	FRY	Lower	LWR	Shoals	SHLS
Avenue	AVE	Field	FLD	Manor	MNR	Shode	SHD
Bayou	BYU	Fields	FLDS	Meadows	MDWS	Shore	SHR
Beach	BCH	Flats	FLT	Meeting	MTG	Shores	SHRS
Bend	BND	Ford	FRD	Memorial	MEM	Siding	SDG
Big	BG	Forest	FRST	Middle	MDL	South	S
Black	BLK	Forge	FRG	Mile	MLE	Space Flight Center	SFC
Boulevard	BLVD	Fork	FRK	Mill	ML	Spring	SPG
Bluff	BLF	Forks	FRKS	Mills	MLS	Springs	SPGS
Bottom	BTM	Fort	FT	Mines	MNS	Square	SQ
Branch	BR	Fountain	FTN	Mission	MSN	State	ST
Bridge	BRG	Freeway	FWY	Mound	MND	Station	STA
Brook	BRK	Furnace	FURN	Mount	MT	Street	ST
Burg	BG	Gardens	GDNS	Mountain	MTN	Stream	STRM
Bypass	BYP	Gateway	GTWY	National	NAT	Sulphur	SLPHR
Camp	CP	Glen	GLN	Neck	NCK	Summit	SMT
Canyon	CYN	Grand	GRND	New	NW	Switch	SWCH
Cape	CPE	Great	GR	North	N	Tannery	TNRY
Causeway	CWSY	Green	GRN	Orchard	ORCH	Tavern	TVRN
Center	CTR	Ground	GRD	Palms	PLMS	Terminal	TERM
Central	CTL	Grove	GRV	Park	PK	Terrace	TER
Church	CHR	Harbor	HBR	Parkway	PKY	Ton	TN
Churches	CHRS	Haven	HVN	Pillar	PLR	Tower	TWR
Circle	CIR	Heights	HTS	Pines	PNES	Town	TWN
City	CY	High	HI	Place	PL	Trail	TRL
Clear	CLR	Highlands	HGLDS	Plain	PLN	Trailer	TRLR
Cliffs	CLFS	Highway	HWY	Plains	PLNS	Tunnel	TUNL
Club	CLB	Hill	HL	Plaza	PLZ	Turnpike	TPKE
College	CLG	Hills	HLS	Port	PRT	Upper	UPR
Corner	COR	Hollow	HOLW	Pond	PT	Union	UN
Corners	CORS	Hospital	HOSP	Prairie	PR	University	UNIV
Court	CT	Hot	H	Ranch	RNCH	Valley	VLY
Courts	CTS	House	HSE	Ranches	RNCHS	Viaduct	VIA
Cove	CV	Inlet	INLT	Rapids	RPDS	View	VW
Creek	CRK	Institute	INST	Resort	RESRT	Village	VLG
Crescent	CRES	Island	IS	Rest	RST	Vale	VL
Crossing	XING	Islands	IS	Ridge	RDG	Vista	VIS
Dale	DL	Isle	IS	River	RIV	Water	WTR
Dam	DM	Junction	JCT	Road	RD	Wells	WLS
Depot	DPO	Key	KY	Rock	RK	West	W
Divide	DIV	Knolls	KNLS	Rural	R	White	WHT
Drive	DR	Landing	LNDG	Saint	ST	Works	WKS
East	E	Lake	LK	Sainte	ST	Yards	YDS
Estates	EST	Lakes	LKS				

STATIONARY POINT SOURCE
FINE PARTICULATE EMISSIONS INFORMATION SYSTEM
DATA INPUT FORMS

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Form Completed by

A - SOURCE DESCRIPTION

Test Series No.	Sub Series No.	Run No.	Card No.			SCC I (Source Category)	SCC II (Type of Operation)	SCC III (Feed Material Class)	Test Series						UTM Zone
									Start Date			Finish Date			
									Mo	Da	Yr	Mo	Da	Yr	
1 2 3 4 5	6 7 8	9 10	11 12 13	14	15	16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32	33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49	50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66	67 68	69 70	71 72	73 74	75 76	77 78	79 80
			A 0 1												

Card No.			SCC IV (Operating Mode Class)	Site Name	
11 12 13	14	15	16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35	36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75	76 77 78 79 80
A 0 2					

Card No.			Source Name	Street	City	State
11 12 13	14	15	16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40	41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60	61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78	79 80
A 0 3						

Card No.			Zip	UTM Coords			Tested By
				X	Y		
11 12 13	14	15	16 17 18 19 20	21 22 23 24	25 26 27 28 29	30	31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80
A 0 4							

Card No.			Reference	
11 12 13	14	15	16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75	76 77 78 79 80
A 0 5				

B - TEST SERIES REMARKS

Test Series No.	Sub Series No.	Run No.	Card No.			Remarks in Text
1 2 3 4 5	6 7 8	9 10	11 12 13	14	15	16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80
			B 0 1			
			B 0 2			
			B 0 3			
			B 0 4			
			B 0 5			
			B 0 6			
			B 0 7			
			B 0 8			
			B 0 9			
			B 1 0			

Figure 2.2-1. FPEIS Standard Data Input Forms.

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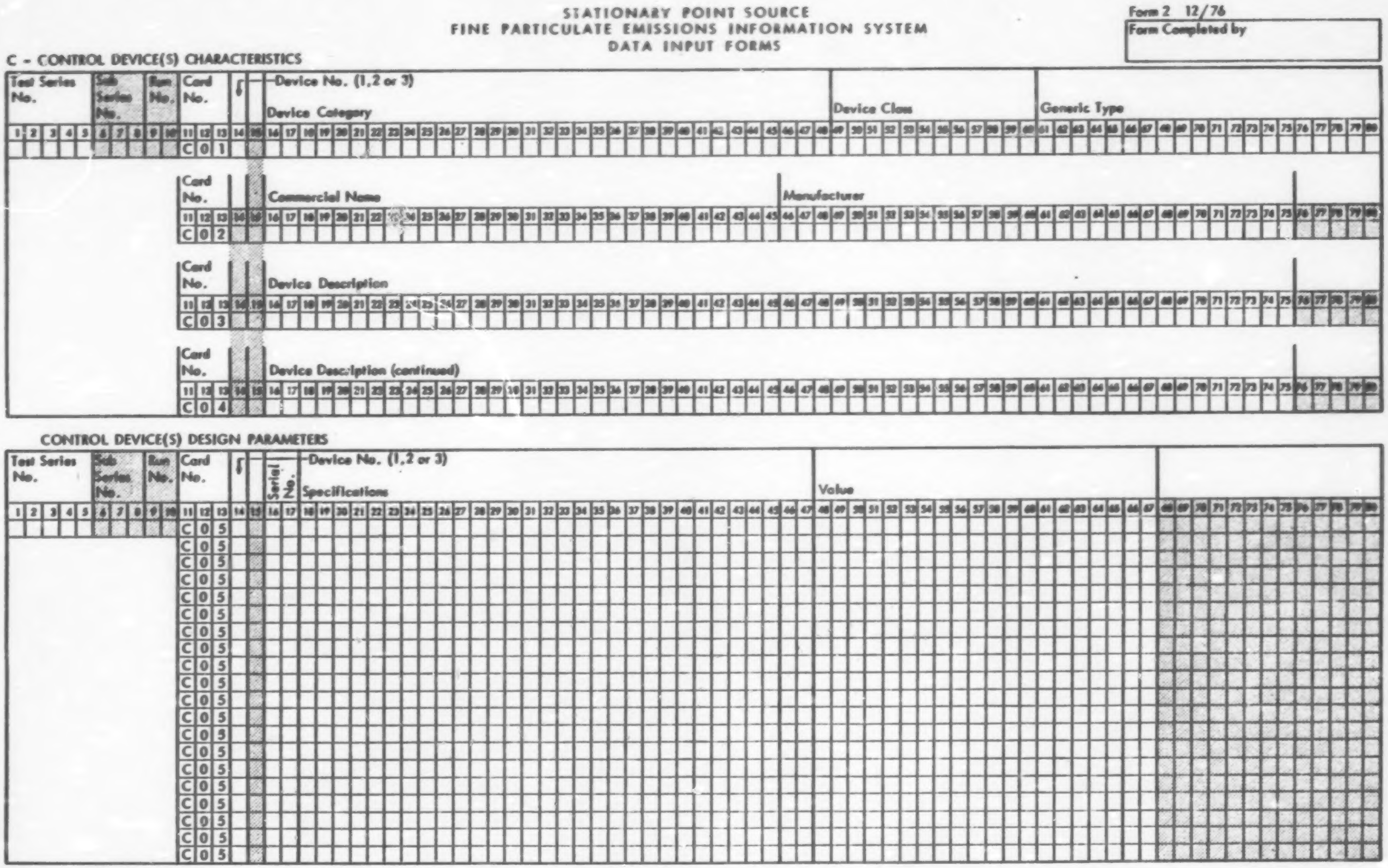

STATIONARY POINT SOURCE
FINE PARTICULATE EMISSIONS INFORMATION SYSTEM
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Form Completed by

C - CONTROL DEVICE(S) CHARACTERISTICS

Test Series No.	Sub Series No.	Run No.	Card No.	∫		Device No. (1,2 or 3) Device Category	Device Class	Generic Type
1 2 3 4 5	6 7 8	9 10	11 12 13	14	15	16–48	49–60	61–80
			C 0 1					

Card No.			Commercial Name	Manufacturer	
11 12 13	14	15	16–45	46–75	76–80
C 0 2					

Card No.			Device Description	
11 12 13	14	15	16–75	76–80
C 0 3				

Card No.			Device Description (continued)	
11 12 13	14	15	16–75	76–80
C 0 4				

CONTROL DEVICE(S) DESIGN PARAMETERS

Test Series No.	Sub Series No.	Run No.	Card No.	∫		Serial No.	Device No. (1,2 or 3) Specifications	Value	
1 2 3 4 5	6 7 8	9 10	11 12 13	14	15	16	17–47	48–67	68–80
			C 0 5						
			C 0 5						
			C 0 5						
			C 0 5						
			C 0 5						
			C 0 5						
			C 0 5						
			C 0 5						
			C 0 5						
			C 0 5						
			C 0 5						
			C 0 5						
			C 0 5						
			C 0 5						
			C 0 5						
			C 0 5						
			C 0 5						
			C 0 5						
			C 0 5						

Figure 2.2-1. Continued.

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STATIONARY POINT SOURCE
FINE PARTICULATE EMISSIONS INFORMATION SYSTEM
DATA INPUT FORMS

D - TEST CHARACTERISTICS

Test Series No.	Sub Series No.	Run No.	Card No.		Control Device Inlet or Outlet (I or Ø)	Test Sub Series Date Mo	Da	Yr	Start Time	Stop Time	Source Operating Mode*	Source Operating Rate*	% Design Capacity*
1 2 3 4 5	6 7 8	9 10	11 12 13	14	15	16 17	18 19	20 21	22 23 24 25	26 27 28 29	30–59	60–76	77 78 79 80
			D 0 1										

Card No.			Feed Material*	Feed Material Composition*
11 12 13	14	15	16–45	46–80
D 0 2				

Card No.			Sampling Location Description*	Volume Flow Rate*	Velocity*	Temp.*	Press.*	% H_2O*	% Iso Kinetic*
11 12 13	14	15	16–55	56 57 58 59 60 61	62 63 64 65	66 67 68 69	70 71 72 73 74	75 76 77	78 79 80
D 0 3									

Card No.			CO_2*	CO*	O_2*	N_2*	Trace Gases in ppm (Text)*
11 12 13	14	15	16 17 18 19	20 21 22 23	24 25 26 27	28 29 30 31	32–80
D 0 4							

CONTROL DEVICE(S) OPERATING PARAMETERS

Test Series No.	Sub Series No.	Run No.	Card No.	Device No. (1,2 or 3)		Serial No.	Specification*	Value*	
1 2 3 4 5	6 7 8	9 10	11 12 13	14	15	16 17	18–47	48–67	68–80
			D 0 5						
			D 0 5						
			D 0 5						
			D 0 5						
			D 0 5						
			D 0 5						
			D 0 5						
			D 0 5						
			D 0 5						
			D 0 5						
			D 0 5						
			D 0 5						
			D 0 5						
			D 0 5						
			D 0 5						
			D 0 5						
			D 0 5						
			D 0 5						
			D 0 5						
			D 0 5						

* Need not be filled if the preceding subseries contains the same data.

Figure 2.2-1. Continued.

STATIONARY POINT SOURCE
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DATA INPUT FORMS

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Form Completed by

CONTROL DEVICE(S) OPERATING PARAMETERS (cont'd)

Test Series No.	Sub Series No.	Run No.	Card No.	⌠	—	Device No. (1,2 or 3) Serial No.	Device No. (1,2 or 3) Specification*	Value*	
1 2 3 4 5	6 7 8	9 10	11 12 13	14	15	16 17	18–47	48–67	68–80
			D05						
			D05						
			D05						
			D05						
			D05						
			D05						
			D05						
			D05						
			D05						
			D05						

SUBSERIES REMARKS

Test Series No.	Sub Series No.	Run No.	Card No.			Remarks In Text*
1 2 3 4 5	6 7 8	9 10	11 12 13	14	15	16–80
			D06			
			D07			
			D08			
			D09			
			D10			
			D11			
			D12			
			D13			
			D14			
			D15			
			D16			
			D17			
			D18			
			D19			
			D20			

E - PARTICULATE MASS TRAIN RESULTS

Test Series No.	Sub Series No.	Run No.	Card No.			Front Half	Total	Mass Train Comments (Text)
1 2 3 4 5	6 7 8	9 10	11 12 13	14	15	16–25	26–35	36–80
			E01			col. 18: • col. 22: E col. 23: +	col. 28: • col. 32: E col. 33: +	

F - PARTICULATE PHYSICAL PROPERTIES

Test Series No.	Sub Series No.	Run No.	Card No.			Density*	⌠	Determination Resistivity*	⌡		Other Physical Properties In Text
1 2 3 4 5	6 7 8	9 10	11 12 13	14	15	16–19	20	21–27	28	29 30	31–80
			F01			▲ between cols. 17 and 18		col. 22: • col. 25: +			

* Need not be filled if the preceding subseries contains the same data.

Figure 2.2-1. Continued.

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G - PARTICULATE BIOASSAY DATA

Test Series No. (1-5)	Sub Series No. (6-8)	Run No. (9-10)	Card No. (11-13)	14	15	Bioassay Test Type (16-35)	Bioassay Comments (36-80)
			G 0 1				
			G 0 1				
			G 0 1				
			G 0 1				
			G 0 1				

H - CHEMICAL COMPOSITION

Test Series No. (1-5)	Sub Series No. (6-8)	Run No. (9-10)	Card No. (11-13)	14	15	16-18	Aerodynamic/Stokes Diameter (1 or 0) (19)	Calib or Calc (1 or 0) (20)	Upper Boundary Diameter (21-27)	Particle Boundary Diameter* ① (28-32)	② (33-38)	③ (39-44)	④ (45-50)	⑤ (51-56)	⑥ (57-62)	⑦ (63-68)	⑧ (69-74)	⑨ (75-80)
			H 0 1						.	.	.	.	.	.	.	.	.	.

Card No. (11-13)	14	15	Analysis I.D. Chemical I.D. (16-19)	↓ (20)	Mass Train Filter or Pooled Stages (21-26)	Chemical Concentration (µg/m³) ① ± (27-32)	② ± (33-38)	③ ± (39-44)	④ ± (45-50)	⑤ ± (51-56)	⑥ ± (57-62)	⑦ ± (63-68)	⑧ ± (69-74)	⑨ ± (75-80)
H 0 2					.	.	.	.	.	.	.	.	.	.
H 0 2					.	.	.	.	.	.	.	.	.	.
H 0 2					.	.	.	.	.	.	.	.	.	.
H 0 2					.	.	.	.	.	.	.	.	.	.
H 0 2					.	.	.	.	.	.	.	.	.	.
H 0 2					.	.	.	.	.	.	.	.	.	.
H 0 2					.	.	.	.	.	.	.	.	.	.
H 0 2					.	.	.	.	.	.	.	.	.	.
H 0 2					.	.	.	.	.	.	.	.	.	.
H 0 2					.	.	.	.	.	.	.	.	.	.
H 0 2					.	.	.	.	.	.	.	.	.	.
H 0 2					.	.	.	.	.	.	.	.	.	.
H 0 2					.	.	.	.	.	.	.	.	.	.
H 0 2					.	.	.	.	.	.	.	.	.	.
H 0 2					.	.	.	.	.	.	.	.	.	.
H 0 2					.	.	.	.	.	.	.	.	.	.
H 0 2					.	.	.	.	.	.	.	.	.	.
H 0 2					.	.	.	.	.	.	.	.	.	.
H 0 2					.	.	.	.	.	.	.	.	.	.
H 0 2					.	.	.	.	.	.	.	.	.	.
H 0 2					.	.	.	.	.	.	.	.	.	.
H 0 2					.	.	.	.	.	.	.	.	.	.
H 0 2					.	.	.	.	.	.	.	.	.	.
H 0 2					.	.	.	.	.	.	.	.	.	.
H 0 2					.	.	.	.	.	.	.	.	.	.

* Need not be filled if the preceding subseries contains the same data.

Figure 2.2-1. Continued.

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Form Completed by

STATIONARY POINT SOURCE
FINE PARTICULATE EMISSIONS INFORMATION SYSTEM
DATA INPUT FORMS

I - MEASUREMENT PARTICULARS

Test Series No.	Sub Series No.	Run No.	Card No.	↓ Measurement Instrument/Method No.		Measurement Instrument/Method Name**	Meas. Start Time	Sampling Period**	Aerosol Flow Rate**	Gas Conditions at Measurement Location** Temp.	Press.	% H_2O		Dilution Factor**
1 2 3 4 5	6 7 8	9 10	11 12 13	14	15	16–45	46 47 48 49	50 51 52 53 ▲ 54	55 56 57 58 ▲ 59 60	61 62 63 64	65 66 67 68 69	70 71 ▲ 72	73 74 75	76 77 78 79 ▲ 80
			I 0 1											

Card No.			Measurement Size Range** Lower	Upper	Collection Surface/Substrate and its Specifications**
11 12 13	14	15	16 17 ▲ 18 19 20	21 22 ▲ 23 24 25	26–80
I 0 2					

Card No.			Comments on the Measurement**
11 12 13	14	15	16–80
I 0 3			
I 0 4			
I 0 5			

J - PARTICULATE SIZE DISTRIBUTION DATA

Test Series No.	Sub Series No.	Run No.	Card No.	↓ Measurement Instrument/Method No.	↓ Aerodynamic/Stokes Diameter (1 or 0)	Particle Size Data**							Calib or Calc (1 or 0) ↓
1 2 3 4 5	6 7 8	9 10	11 12 13	14	15	16 17 18 19 • 20 21 22 23	24 25 26 27 • 28 29 30 31	32 33 34 35 • 36 37 38 39	40 41 42 43 • 44 45 46 47	48 49 50 51 • 52 53 54 55	56 57 58 59 • 60 61 62 63	64 65 66 67 • 68 69 70 71	72 73 74 75 • 76 77 78 79 80
			J 0 1										
			J 0 2										
			J 0 3										

Card No.	↓ Measurement Instrument/Method No.	↓ Mass/No. (1 or 0)	Mass/Number Data							
11 12 13	14	15	16 17 • 18 19 20 21 ± 22 23	24 25 • 26 27 28 29 ± 30 31	32 33 • 34 35 36 37 ± 38 39	40 41 • 42 43 44 45 ± 46 47	48 49 • 50 51 52 53 ± 54 55	56 57 • 58 59 60 61 ± 62 63	64 65 • 66 67 68 69 ± 70 71	72 73 • 74 75 76 77 ± 78 79 80
J 0 4										
J 0 5										
J 0 6										

** Need not be filled if the preceding subseries or run with this instrument/method contains the same data.

Figure 2.2-1. Concluded.

2.3 Encoding Instructions

This section presents detailed, card-by-card encoding instructions for each FPEIS data element. The discussion is separated into ten groups corresponding to the major data groupings of FPEIS data. The FPEIS Data Input Form number is given for each group, and an example completed form is shown for each group of data.

Each card type has been designated REQUIRED CARD or CARD NOT REQUIRED. This pertains to the minimum data set requirement. Some data, such as, control device design and operating parameters, bioassay or chemical analysis, may not be available, and consequently, there would be no data to enter. These cards as well as those pertaining to comments are not required to be part of the minimum data set. Other cards may or may not be required depending upon a previous card. For example, the C01 card describes the applied control device. If there is no applied device (i.e., an uncontrolled source), then cards C02-C05 and D05 are not needed. Otherwise, all of these cards must be present.

2.3.1 Section A - Source Description - Form 1

Card Columns	Data Element	Encoding Instructions
CARD A01	(REQUIRED CARD)	
1-5	Test Series Number	Enter a nonzero, sequential number for each test series reported, right-justified. This number will be used for preliminary identification purposes only. A permanent FPEIS test series number will be assigned by the FPEIS data base administrator when the data are entered into the FPEIS.
6-8	Subseries Number	Leave blank.
9-10	Run Number	Leave blank.
11-13	Card Letter and Number	Do not change.
14-15	Special Code	Leave blank.
16-32	SCC I	Enter Source Classification Code I description (source category) as text beginning in Column 16 (see Table 2.1-4). A new code has been added to the NEDS codes for laboratory evaluation of control device, and more codes may be added later. Note also that FPEIS requires the word description of NEDS codes rather than numeric codes. Use the exact wording given in Table 2.1-4, left-justified.
33-49	SCC II	As above for SCC II (type of operation). Exact spelling required.
50-66	SCC III	As above for SCC III (feed material class). Exact spelling required.
67-72	Test Series Start Data	Enter integer date as MM-DD-YY. This is the source/control device or field/laboratory test starting date.

Card Columns	Data Element	Encoding Instructions
CARD A01 (cont'd)		
73-78	Test Series Finish Date	As above for the field/laboratory test finish date. Enter as integer date as MM-DD-YY.
79-80	UTM Zone	The Universal Transverse Mercator (UTM) is another means of identifying the location of the source. The UTM Zone number, which is indicated on each USGS map, must be cited to locate the coordinates properly. Figure 2.3-1 indicates that Zones 10 through 19 encompass the 48 contiguous states; Zones 1 through 9, Alaska; Zones 19 and 20, Puerto Rico and the Virgin Islands; and Zones 1 through 5, Hawaii. For a complete description of the Universal Transverse Mercator (UTM) system, see the references below.[1-3]

1/ "Universal Transverse Mercator Grid," U.S. Department of the Army, Washington, D.C., Publication No. TM5-241-8, July 1958.

2/ "Universal Transverse Mercator Grid, Zone-to-Zone Transformation Tables," U.S. Department of the Army, Washington, D.C., Publication No. TM5-241-2, June 1957.

3/ Dietz, C. H., and D. S. Adams, "Elements of Map Projection," U.S. Department of Commerce, Washington, D.C., Special Publication No. 68 (1945).

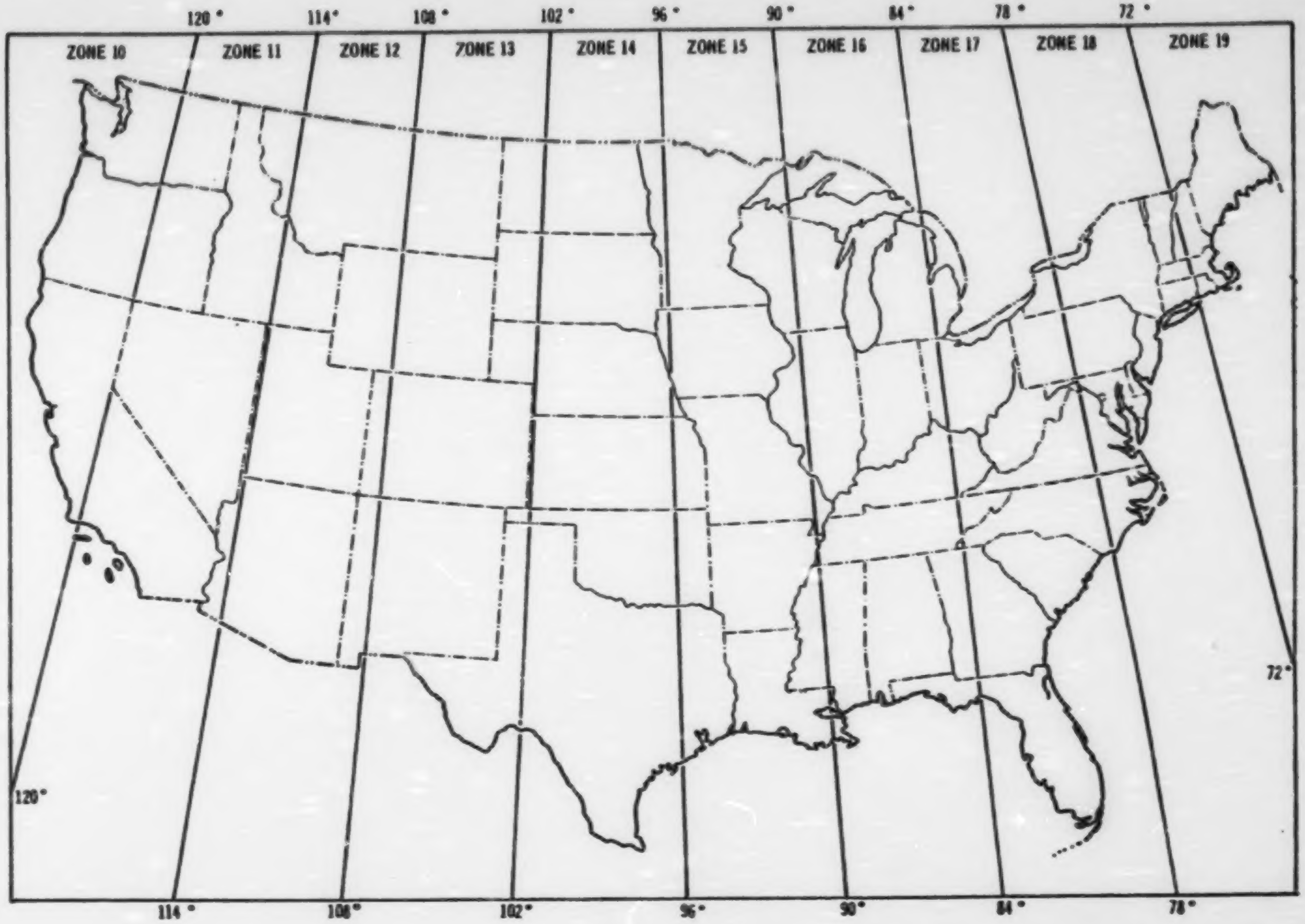

120°
114°
108°
102°
96°
90°
84°
78°
72°
ZONE 10
ZONE 11
ZONE 12
ZONE 13
ZONE 14
ZONE 15
ZONE 16
ZONE 17
ZONE 18
ZONE 19
72°
120°
114°
108°
102°
96°
90°
84°
78°

Figure 2.3-1. UTM Grid Zones in the Contiguous United States.

Card Columns	Data Element	Encoding Instructions
CARD A02	(REQUIRED CARD)*	
1-10	Data Identification	Leave Blank. While punching the cards, the keypuncher will duplicate the first 10 columns of A01 card.
11-13	Card Number	No not change.
14-15	Special Codes	Leave blank.
16-35	SCC IV	Source Classification Code IV description (operating mode class) as text beginning Column 16 (see Table 2.1-4).
36-75	Site Name	The name of the site where the source is located. Enter as text, beginning in Column 36.
76-80	Blank	Leave blank.
CARD A03	(REQUIRED CARD)**	
16-40	Source Name	Name of the source in text.
41-60	Street Address	Number and name of the street address in text (beginning in Column 41.
61-78	City	Name of the city, township, or area, beginning in Column 61.
79-80	State	Two-letter code for state in which source is located (see Table 2.1-5).

---

* Enter NA for data not available.

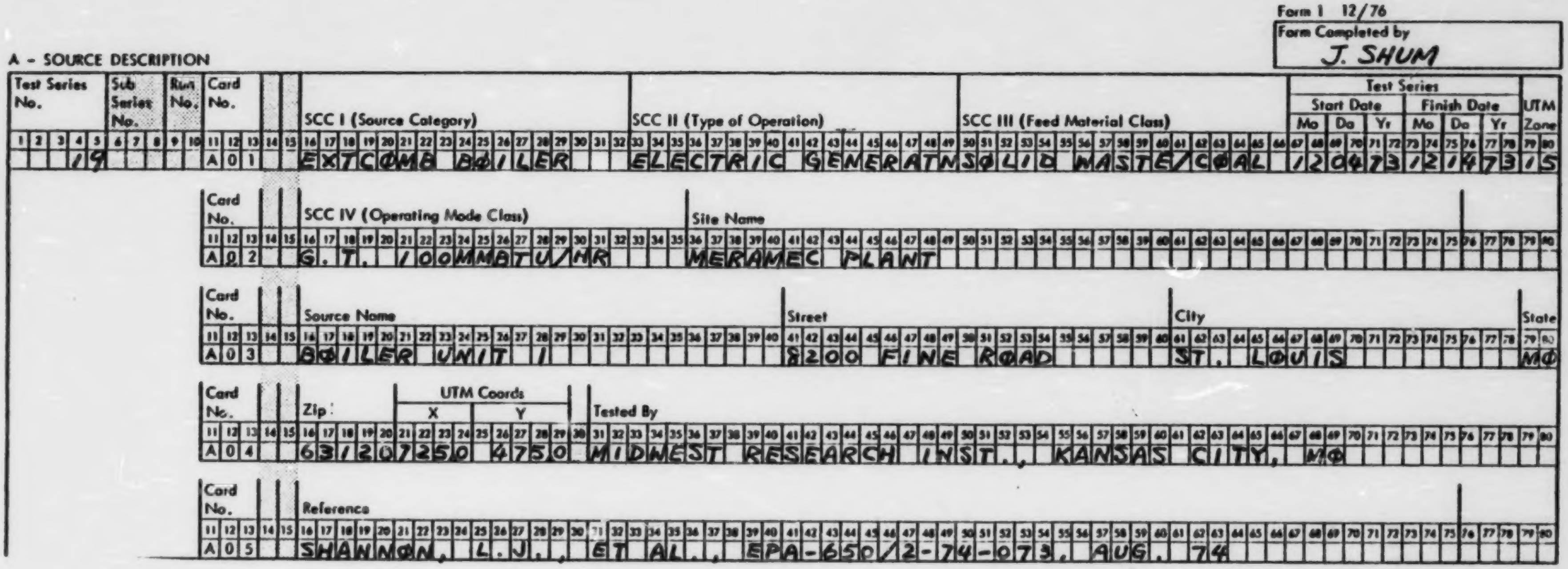
** Enter CONFIDENTIAL for confidential data.

Card Columns	Data Element	Encoding Instructions
CARD A04	(REQUIRED CARD)	
16-20	Zip Code	Enter the zip code of source location.
21-24	UTM Coords-X	The Universal Transverse Mercator X-coordinate for the test site. The UTM coordinates are found on USGS maps with scales less than 1:250,000. The 1:24,000 scale is necessary to locate the point source adequately. The decimal point is indicated by the small triangle.*
25-29	UTM Coords-Y	Enter the Y-coordinate as above.*
30	Blank	Leave blank.
31-80	Tested by	Enter the name of the testing group or company as text.
CARD A05	(REQUIRED CARD)**	
16-75	Reference	Enter report number, date, or cite the journal from which the data was derived as text data beginning in card Column 16.

---

* See references at bottom of page UG-2.3.1-2.

** Enter CONFIDENTIAL for classified documents.



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Form Completed by J. SHUM

A - SOURCE DESCRIPTION

Test Series No.	Sub Series No.	Run No.	Card No.	SCC I (Source Category)	SCC II (Type of Operation)	SCC III (Feed Material Class)	Test Series Start Date Mo	Da	Yr	Finish Date Mo	Da	Yr	UTM Zone
19			A01	EXTCOMB BOILER	ELECTRIC GENERATN	SOLID WASTE/COAL	12	04	73	12	14	73	15

Card No.	SCC IV (Operating Mode Class)	Site Name
A02	G.T. 100MMBTU/HR	MERAMEC PLANT

Card No.	Source Name	Street	City	State
A03	BOILER UNIT 1	8200 FINE ROAD	ST. LOUIS	MO

Card No.	Zip:	UTM Coords X	UTM Coords Y	Tested By
A04	63120	7250	4750	MIDWEST RESEARCH INST., KANSAS CITY, MO

Card No.	Reference
A05	SHANNON, L.J., ET AL., EPA-650/2-74-073, AUG. 74

Figure 2.3-2. Sample Completed A-Cards--Source Description.

2.3.2 Section B - Test Series Remarks - Form 1

Card Columns	Data Element	Encoding Instructions
CARD B01 (CARD NOT REQUIRED)		
1-10	Data Identification	Same as Card A01.
11-13	Card Identification	Do not change.
14-15	Special Codes	Leave blank.
16-80	Remarks	Enter test series remarks as text.
CARD B02-B10 (CARDS NOT REQUIRED)		
16-80	Remarks	Test series remarks continued from Card B01.

B - TEST SERIES REMARKS

Test Series No.	Sub Series No.	Run No.	Card No.			Remarks in Text
1 2 3 4 5	6 7 8	9 10	11 12 13	14	15	16–80
19			B01			IMPACTOR CUT POINTS COMPUTED FROM RANZ AND WONG THEORY
			B02			
			B03			
			B04			
			B05			
			B06			
			B07			
			B08			
			B09			
			B10			

Figure 2.3-3. Sample Completed B-Cards--Test Series Remarks.

2.3.3 Section C - Control Device(s) Characteristics - Form 2

Card Columns	Data Element	Encoding Instructions
CARD C01	(REQUIRED CARD)	
1-10	Data Identification	Same as on Card A01.
11-13	Card Designation	Do not change.
14	Device Number	Enter sequence number (1, 2, or 3) given to the control device. For example, if a control system consists of a cyclone and a spray tower followed by an ESP, there are three control devices in the system. The cyclone is Device No. 1, the spray tower is Device No. 2, and the ESP is Device No. 3. Multiple devices are numbered seqentially from the source.
15	Special Code	Blank.
16-48	Device Category	Enter a descriptive definition of the generic device in text form beginning in Column 16. Use standard nomenclature given in Table 2.1-7.
49-60	Device Class	Enter device class as text using standard nomenclature given in Table 2.1-6, beginning in Card Column 48.
61-80	Generic Type	Enter the type of generic control device as text beginning in card Column 61. Use only standard nomenclature as given in Table 2.1-6.

Card Column	Data Element	Encoding Instructions
CARD C02	(REQUIRED CARD)*	
16-45	Commercial Name	Enter the commercial name (and model number) of the control device as text beginning in card Column 16.
46-75	Manufacturer	Enter the name of the device manufacturer as text beginning in card Column 46.
76-80	Blank	Leave blank.
CARD C03	(REQUIRED CARD)*	
16-75	Device Description	Enter a brief description of the device as text which can include the principle of operation, size, shape, modifications to a standard unit, etc. Use abbreviations as much as possible beginning in card Column 16.
76-80	Blank	Leave blank.
CARD C04	(REQUIRED CARD)*	
		The instructions for this card are the same as for Card C03.

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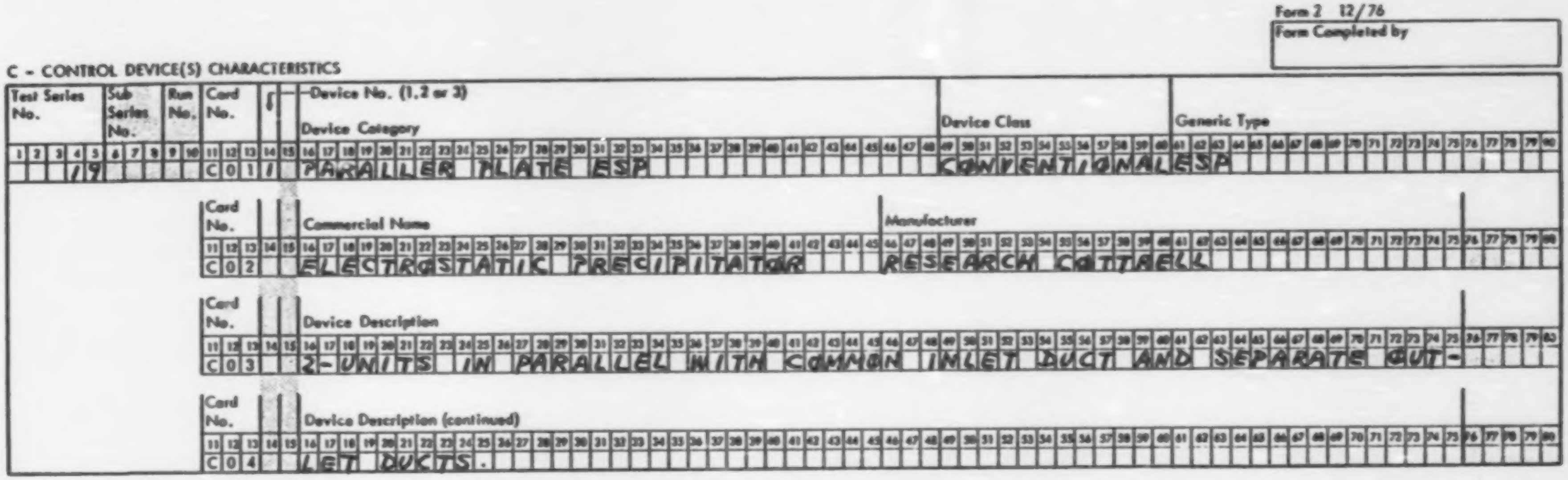
* Not required if entry for GENERIC TYPE (C01, C061-80) is "NONE."



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Form Completed by

C - CONTROL DEVICE(S) CHARACTERISTICS

Test Series No.	Sub Series No.	Run No.	Card No.	Device No. (1,2 or 3)	Device Category	Device Class	Generic Type
19			C01	1	PARALLER PLATE ESP	CONVENTIONAL	ESP

Card No.	Commercial Name	Manufacturer
C02	ELECTROSTATIC PRECIPITATOR	RESEARCH COTTRELL

Card No.	Device Description
C03	2-UNITS IN PARALLEL WITH COMMON INLET DUCT AND SEPARATE OUT-

Card No.	Device Description (continued)
C04	LET DUCTS.

Figure 2.3-4. Sample Completed C01-C04 Cards--Control Device(s) Characteristics.

Card Columns	Data Element	Encoding Instructions
CARD C05 - Control Device Design Parameters (REQUIRED CARDS)*		
1-10	Data Identification	Same as on Card A01 for the first card and blank for subsequent cards.
11-13	Card Designation	Do not change.
14	Control Device Number	Enter device number (from C01 card).
15	Special Code	Leave blank.
16-17	Serial Number	Enter nonzero, sequential number (starting from 1) for the control device design parameter.
18-47	Design Parameter Specification	Specify in alphanumeric format the design parameter as standard nomenclature from Table 2.1-8 beginning in card Column 18.
48-67	Design Parameter Value	Enter the value of the design parameter and its units as text using the standard nomenclature in Table 2.1-8. Separate the value and units by two (2) blanks. Begin entry of value in card Column 48.
68-80	Blank	Leave blank.

---

* Not required if entry for GENERIC TYPE (C01, CC61-80) is "NONE."

CONTROL DEVICE(S) DESIGN PARAMETERS

Test Series No. (1–5)	Sub Series No. (6–8)	Run No. (9–10)	Card No. (11–13)	ʃ (14)	— (15)	Serial No. (16)	Device No. (1,2 or 3) (17)	Specifications (18–47)	Value (48–67)	(68–80)
19			C05	1			1	ELECTRØDE AREA	5174.5 M2	
			C05	1			2	CØRØNA WIRE DIA.	2.8 MM	
			C05	1			3	PLATE TØ PLATE SPACING	238 MM	
			C05							
			C05							
			C05							
			C05							
			C05							
			C05							
			C05							
			C05							
			C05							
			C05							
			C05							
			C05							
			C05							
			C05							
			C05							
			C05							
			C05							

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Figure 2.3-5. Sample Completed C05 Cards--Control Device(s) Design Parameters.

2.3.4 Section D - Test Characteristics - Form 3, Form 4

Card Columns	Data Element	Encoding Instructions
CARD D01	(REQUIRED CARD)	
1-5	Test Series Number	As on Card A01.
6-8	Test Subseries Number	Enter the integer number of the subseries within this test series.
9-10	Blank	Leave blank.
11-13	Card Designation	Do not change.
14	Blank	Leave blank.
15	Control Device Inlet or Outlet	Enter the letter Code I for inlet or 0 for outlet. When there is no control device, indicate NONE on Card C01, Columns 61 through 64, and enter I in this column.
16-21	Date	Test subseries starting date entered as integer MM-DD-YY.
22-25	Start Time	Test subseries start time on the basis of 24-hr day (military time).
26-29	Stop Time	Test subseries finish time expressed as above.
30-59	Source Operating Mode	Specify the source operating conditions at the time of the test as text beginning in card Column 30. If the operation of the source is cyclical, then specify the operating mode at the time of test.
60-76	Source Operating Rate	Enter the measured (not designed) operating output rate of the source and the appropriate units as text beginning in card Column 60. Separate the value and unit by one blank.

Card Columns	Data Element	Encoding Instructions
CARD D01 (cont'd)		
77-80	Percent Design Capacity	Specify the percent of the design capacity at which the source is operating during the time of test. The decimal point is represented by the triangle between Columns 79 and 80.
CARD D02	(CARD NOT REQUIRED)	
16-45	Feed Material	Specify in text (alphanumeric) beginning in card Column 16 the type of source material.
46-80	Feed Material Composition	Specify briefly the major constituents of the feed material as text beginning card Column 46.
CARD D03	(CARD NOT REQUIRED)	
16-55	Sampling Location Description	Describe the sampling location in terms of duct diameter or meters from the the nearest obstruction or bent. Enter any information that affects the sampling and transport of aerosol. Be brief and use abbreviations.
56-61	Volume Flow Rate	Enter the total volume flow rate of effluent gas at the sampling location as a decimal number in units of dry normal m^3/s. The decimal point is implied between Columns 60 and 61.
62-65	Velocity	Enter the velocity of gas at the sampling location as a decimal number in units of m/s. The decimal point is implied between Columns 64 and 65.
66-69	Temperature	Enter the temperature of the gas at sampling location as an integer number in units of degree celsius. Right-justify entry to Column 69.

Card Columns	Data Element	Encoding Instructions
CARD D03 (Cont'd)		
70-74	Pressure	Enter the absolute static pressure at the sampling location as an integer number in units of mm Hg. Right-justify entry to Column 74.
75-77	Percent H_2O	Enter the percent by volume of water vapor at the sampling location as a decimal number. The decimal point is implied between Columns 76 and 77.
78-80	Percent Isokinetic	Enter the percent isokinetic sampling achieved at the sampling location as an integer number right-justified to card Column 80.
CARD D04	(CARD NOT REQUIRED)	
16-19	CO_2	Enter the percent of total gas of CO_2 as determined by Orsat gas analysis as a decimal number. the decimal point is implied between card Columns 17 and 18.
20-23	CO	Enter the percent of total gas of CO as determined by Orsat gas analysis as a decimal number, The decimal point is implied between card Columns 21 and 22.
24-27	O_2	Enter the percent of total gas of O_2 as determined by Orsat gas analysis as a decimal number. The decimal point is implied between card Columns 25 and 26.
28-31	N_2	Enter the percent of total gas of N_2 as determined by Orsat gas analysis as a decimal number. The decimal point is implied between card Columns 29 and 30.
32-80	Trace Gases in PPM	Enter the results of trace gas analysis as text beginning in card Column 32. Enter the chemical symbol followed by a dash and the value in parts per million (ppm). Separate multiple entries by commas. Use subseries remarks for overflow space.

Card Columns	Data Element	Encoding Instructions
CARD D05 - Control Device Operating Parameters (CARD NOT REQUIRED)		
1-10	Data Identification	Encode same as on D01 card.
11-13	Card Designation	Do not change.
14	Device Number	Enter the control device number as defined on Card C01.
15	Special Code	Leave blank.
16-17	Serial Number	When encoding the first subseries, enter the serial number for each of the control device operating parameters. For the second and subsubsequent subseries enter the serial number of operating parameter being entered as given for the first subseries.
18-47	Specification	Enter the control device operating parameter as text using standard nomenclature from Table 2.1-9 beginning in card Column 18. For second and subsequent subseries utilize the labor saving feature explained on page UG-2.1.5-2.
48-67	Value	Enter the value of control device operating parameter and units using standard nomenclature from Table 2.1-9 as text beginning in card Column 48. The value and units should be separated by two blank spaces.
68-80	Blank	Leave blank.
CARD D06 - Subseries Remarks (CARD NOT REQUIRED)		
1-10	Data Identification	Same as D05 card.
16-80	Remarks	Enter subseries remarks as text beginning in card Column 16.

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Form Completed by

D - TEST CHARACTERISTICS

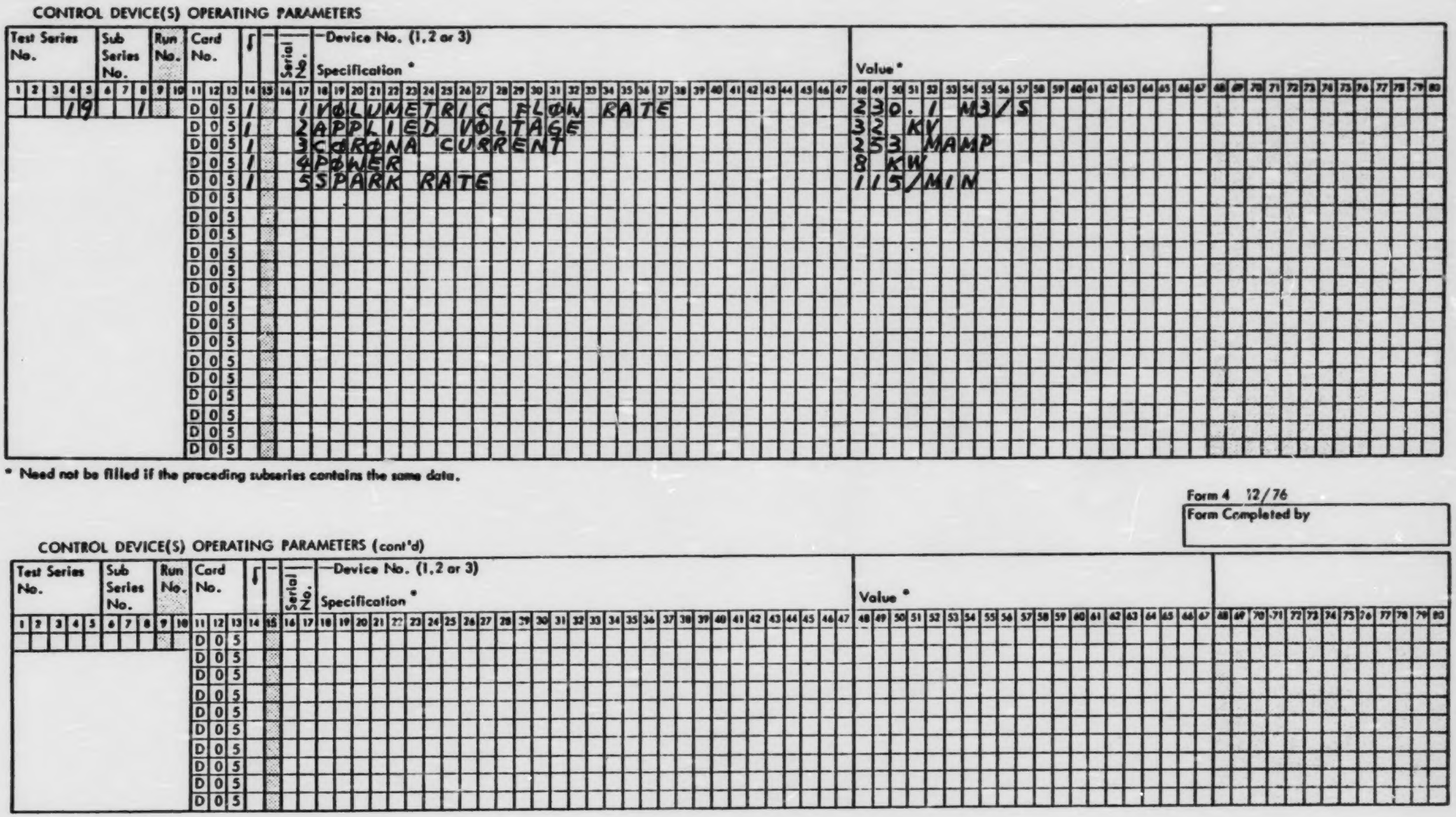
Test Series No. (1-5)	Sub Series No. (6-8)	Run No. (9-10)	Card No. (11-13)	14	Control Device Inlet or Outlet (I or Ø) (15)	Test Sub Series: Date Mo (16-17)	Da (18-19)	Yr (20-21)	Start Time (22-25)	Stop Time (26-29)	Source Operating Mode* (30-59)	Source Operating Rate* (60-76)	% Design Capacity* (77-80)
19	1		D01		I	12	04	73	0830	1100	CØAL+REFUSE BURNING	120 MW	100

Card No. (11-13)	14	15	Feed Material* (16-45)	Feed Material Composition* (46-80)
D02			ØRIENT 6 CØAL AND MUN. REFUSE	9% REFUSE

Card No. (11-13)	14	15	Sampling Location Description* (16-55)	Volume Flow Rate* (56-61)	Velocity* (62-65)	Temp.* (66-69)	Press.* (70-74)	% H2O* (75-77)	% Iso Kinetic* (78-80)
D03			ABØUT 2M FRØM BEND (RAD. ØF CURV.=2.3M)	169	204	164	760	55	100

Card No. (11-13)	14	15	CO_2* (16-19)	CO* (20-23)	O_2* (24-27)	N_2* (28-31)	Trace Gases in ppm (Text)* (32-80)
D04			145	01	65	79	SØ2=900, SØ3=0, NØ=220

Figure 2.3-6. Sample Completed D01-D04 Cards--Test Characteristics.



CONTROL DEVICE(S) OPERATING PARAMETERS

Test Series No. (1–5)	Sub Series No. (6–8)	Run No. (9–10)	Card No. (11–13)	∫ (14)	— (15)	Serial No. (16–17) —Device No. (1,2 or 3)	Specification * (18–47)	Value * (48–67)	(68–80)
19	1		D05	1		1	VOLUMETRIC FLOW RATE	230. 1 M3/S	
			D05	1		2	APPLIED VOLTAGE	32 KV	
			D05	1		3	CORONA CURRENT	253 MAMP	
			D05	1		4	POWER	8 KW	
			D05	1		5	SPARK RATE	115/MIN	
			D05						
			D05						
			D05						
			D05						
			D05						
			D05						
			D05						
			D05						
			D05						
			D05						
			D05						
			D05						
			D05						
			D05						
			D05						

* Need not be filled if the preceding subseries contains the same data.

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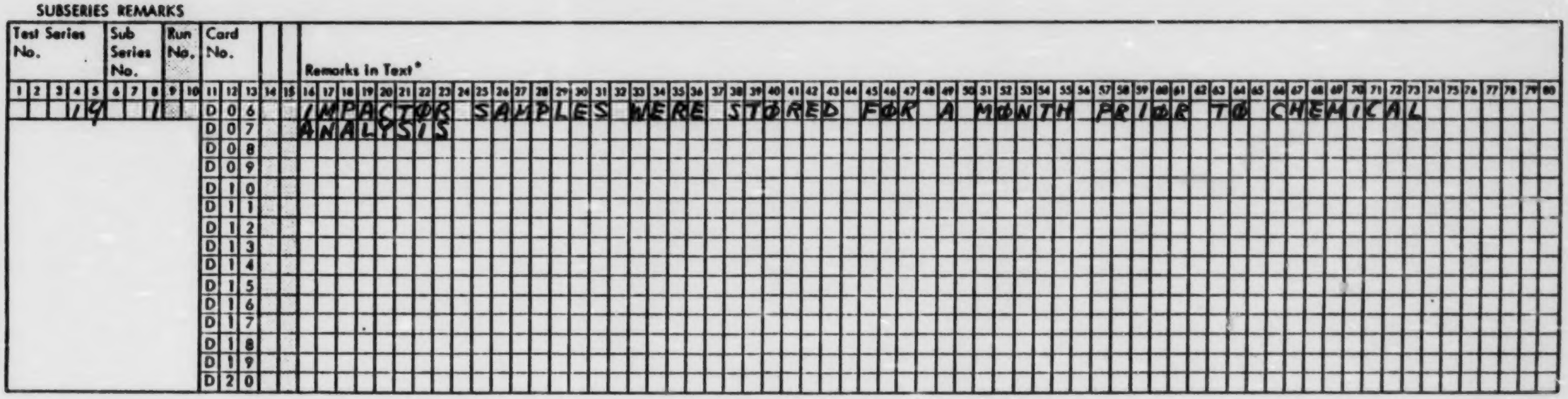
Form Completed by

CONTROL DEVICE(S) OPERATING PARAMETERS (cont'd)

Test Series No. (1–5)	Sub Series No. (6–8)	Run No. (9–10)	Card No. (11–13)	∫ (14)	— (15)	Serial No. (16–17) —Device No. (1,2 or 3)	Specification * (18–47)	Value * (48–67)	(68–80)
			D05						
			D05						
			D05						
			D05						
			D05						
			D05						
			D05						
			D05						
			D05						
			D05						

Figure 2.3-7. Sample Completed D05 Cards--Control Device(s) Operating Parameters.



SUBSERIES REMARKS

Test Series No. (1–5)	Sub Series No. (6–8)	Run No. (9–10)	Card No. (11–13)	14	15	Remarks In Text* (16–80)
19	1		D06			IMPACTOR SAMPLES WERE STORED FOR A MONTH PRIOR TO CHEMICAL
			D07			ANALYSIS
			D08			
			D09			
			D10			
			D11			
			D12			
			D13			
			D14			
			D15			
			D16			
			D17			
			D18			
			D19			
			D20			

Figure 2.3-8. Sample Completed D06-D20 Cards--Subseries Remarks.

2.3.5 Section E - Mass Train Test Results - Form 4

Card Columns	Data Element	Encoding Instructions
CARD E01	(CARD NOT REQUIRED)	
1-8	Data Identification	Same as D01 card.
16-25	Front Half	Enter the mass train front half concentration in scientific notation in units of μg per dry normal m^3. The exponent shall be right-justified in card Column 25. The decimal point is specified in card Column 18. (This data includes the mass collected in the nozzle and probe wash and the filter.)*
26-35	Total	Enter the total mass concentration as the sum of the front half mass and the impinger. Enter the value in scientific notation in units of μg per dry normal m^3. The exponent shall be right-justified in card Column 35. The decimal point is specified in card Column 28.*
36-80	Mass Train Comments	Enter any brief comments on the mass train as text beginning in card Column 36.

---

* Note that these values are to be entered as exponential numbers with exponents following the "+" in Columns 24, 25, and 34, 35.

E - PARTICULATE MASS TRAIN RESULTS

Test Series No.	Sub Series No.	Run No.	Card No.			Front Half	Total	Mass Train Comments (Text)
1 2 3 4 5	6 7 8	9 10	11 12 13	14	15	16 17 18 19 20 21 22 23 24 25	26 27 28 29 30 31 32 33 34 35	36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80
19	1		E01			5.21 E+05	4.78 E+06	EPA METHOD 5 TRAIN

Figure 2.3-9. Sample Completed E-Card--Particulate Mass Train Results.

2.3.6 Section F - Particulate Physical Properties - Form 4

Card Columns	Data Element	Encoding Instructions
CARD F01	(REQUIRED CARD FOR FIRST SUBSERIES)	
1-8	Data Identification	Same as D01
16-19	Density	Enter density as a decimal number in units of g/cm^3. The decimal point is implied between card Columns 17 and 18.
20	Density Determination	Enter the integer 1 for "measured," 0 for "assumed."
21-27	Resisitivity	Enter resistivity in scientific notation in units of ohm-cm. The exponent shall be right-justified in card Column 27. The decimal point is specifield in card Column 22.
28	Resistivity Determination	Enter the integer 1 for "measured," 0 for "assumed."
29-30	Blank	Leave blank.
31-90	Other Physical Properties	Enter as text beginning in card Column 31 any additional physical properties, values, and units to be reported.

F - PARTICULATE PHYSICAL PROPERTIES

Test Series No.	Sub Series No.	Run No.	Card No.				—Determination—					
						Density*		Resistivity*				Other Physical Properties in Text
1 2 3 4 5	6 7 8	9 10	11 12 13	14	15	16 17 18 19	20	21 22 23 24 25 26 27	28	29	30	31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80
1 9	1		F 0 1			2.2 7	0	2 • 3 + 1 1	0			

* Need not be filled if the preceding subseries contains the same data.

Figure 2.3-10. Sample Completed F-Card--Particulate Physical Properties.

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2.3.7 Section G - Particulate Bioassay Data - Form 5

Card Columns	Data Element	Encoding Instructions
CARD G01 (CARD NOT REQUIRED)		
1-8	Data Identification	Same as D01.
16-35	Bioassay Test Type	Enter the bioassay test type performed on the sample as text using standard nomenclature given in Table 2.1-10, beginning in card Column 16. Correct spelling is essential.
36-80	Bioassay Comments	Enter results of the indicated test as above as text beginning in card Column 36.

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Form Completed by

G - PARTICULATE BIOASSAY DATA

Test Series No. (1–5)	Sub Series No. (6–8)	Run No. (9–10)	Card No. (11–13)	14	15	Bioassay Test Type (16–35)	Bioassay Comments (36–80)
19	1		G01			SKIN PAINTING	SKIN PAINTING INDICATED NO CHANGE DUE TO
			G01				PARTICULATE USED
			G01				
			G01				
			G01				

Figure 2.3-11. Sample Completed G-Cards--Particulate Bioassay Data.

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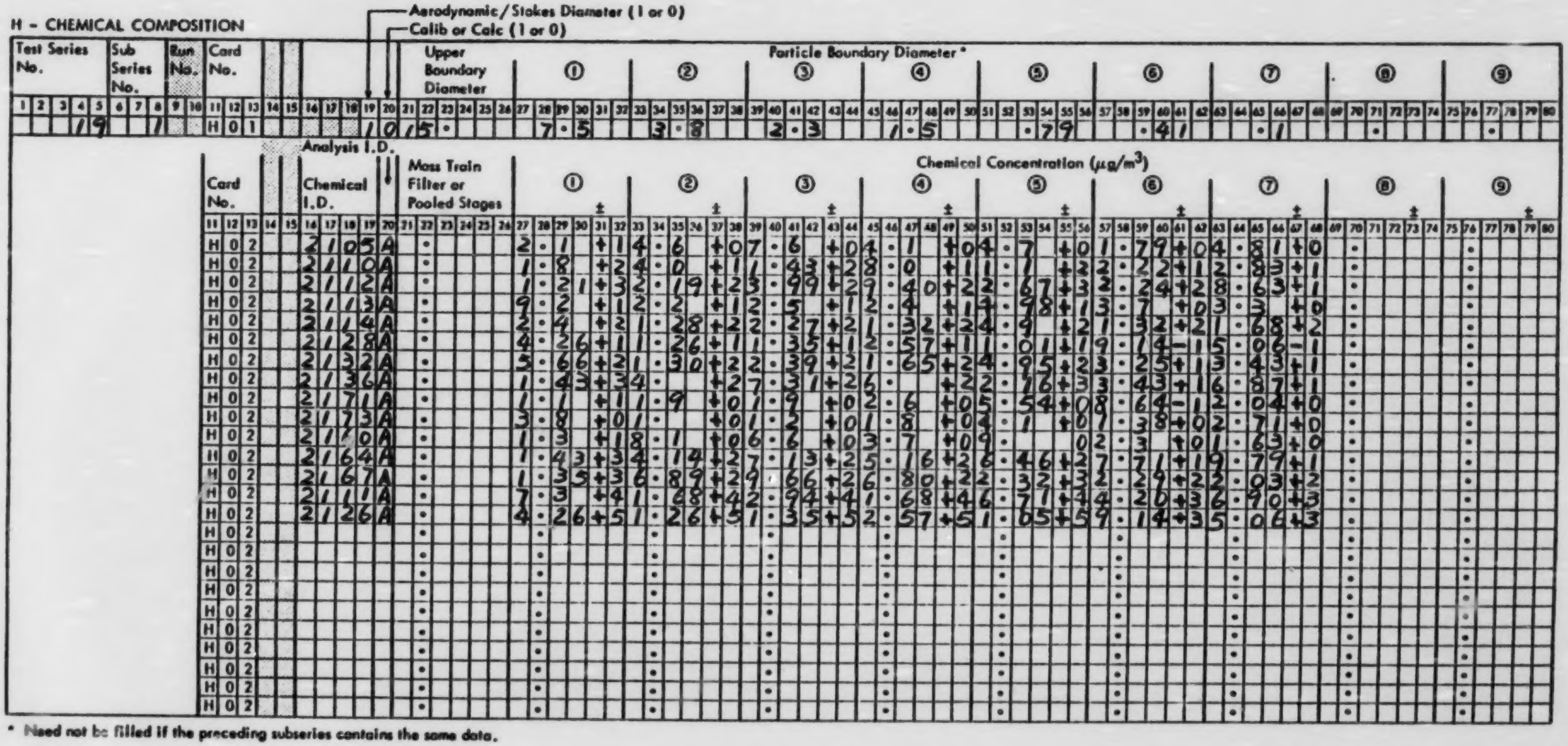
2.3.8 Section H - Chemical Composition Data - Form 5

Card Columns	Data Element	Encoding Instructions
CARD H01 (CARD NOT REQUIRED)		
1-8	Data Identification	Same as D01 card.
16-18	Blank	Leave blank.
19	Aerodynamic/Stokes Diameter	Enter the integer 1 for "aerodynamic" particle diameter, 0 for "Stokes" particle diameter.
20	Calibrated or Calculated	Enter the integer 1 for "calibrated" instrument cut diameters, 0 for "calculated" instrument cut diameters.
21-26	Upper Boundary Diameter	Enter the upper boundary diameter value as a decimal number in units of μm. The decimal point is specified in card Column 23.
27-32	Particle Boundary Diameter-1st Stage	Enter the particle boundary diameter value as a decimal number in units of μm. The decimal point is specified.
33-38	Particle Boundary Diameter-2nd Stage	Same as 1st stage.
39-44	Particle Boundary Diameter-3rd Stage	Same as 1st stage.
45-50	Particle Boundary Diameter-4th stage	Same as 1st stage.
51-56	Particle Boundary Diameter-5th Stage	Same as 1st stage.
57-62	Particle Boundary Diameter-6th Stage	Same as 1st stage.
63-68	Particle Boundary Diameter-7th Stage	Same as 1st stage.
69-74	Particle Boundary Diameter-8th Stage	Same as 1st stage.
75-80	Particle Boundary Diameter-9th Stage	Same as 1st stage.

Card Columns	Data Element	Encoding Instructions
CARD H02	(CARD NOT REQUIRED)	
16-19	Chemical ID	Enter the integer code number for the chemical element or compound using the SAROAD standard nomenclature given in Table 2.1-11.
20	Analysis ID	Enter the code letter for the chemical analysis performed using the standard nomenclature given in Table 2.1-12.
21-26	Mass Train Filter/ Pooled Stages	Enter the chemical concentration as a decimal number in units of μg/dry normal m^3 for the mass train filter or the pooled stages. The decimal point is specified in card Column 22.
27-32	Chemical Concentration-1st Stage	Enter in scientific notation in units of μg/dry normal m^3. The decimal point is specified in the second column in the field. The sign of the exponent (+ or -) shall be entered in the fifth column, and the value of the exponent as an integer in the seventh column.
33-38	Chemical Concentration-2nd Stage	Same as 1st stage.
39-44	Chemical Concentration-3rd Stage	Same as 1st stage.
45-50	Chemical Concentration-4th Stage	Same as 1st stage.
51-56	Chemical Concentration-5th Stage	Same as 1st stage.

Card Columns	Data Element	Encoding Instructions
CARD H02 (Cont'd)		
57-62	Chemical Concentration-6th Stage	Same as 1st stage.
63-68	Chemical Concentration-7th Stage	Same as 1st stage.
69-74	Chemical Concentration-8th Stage	Same as 1st stage.
75-80	Chemical Concentration-9th Stage	Same as 1st stage.



H - CHEMICAL COMPOSITION

Test Series No. (1-5)	Sub Series No. (6-8)	Run No. (9-10)	Card No. (11-13)	14	15	16-18	19 Aerodynamic/Stokes Diameter (1 or 0)	20 Calib or Calc (1 or 0)	Upper Boundary Diameter (21-26)	Particle Boundary Diameter* ①	②	③	④	⑤	⑥	⑦	⑧	⑨
19	1		H01				1	0	15.	7.5	3.8	2.3	1.5	.79	.41	.1	.	.

Card No. (11-13)	14	15	Analysis I.D. Chemical I.D. (16-20)	Mass Train Filter or Pooled Stages (21-26)	Chemical Concentration (μg/m³) ①	±	②	±	③	±	④	±	⑤	±	⑥	±	⑦	±	⑧	±	⑨	±
H02			2105A	.	2.1	+1	4.6	+0	7.6	+0	4.1	+0	4.7	+0	1.79	+0	4.81	+0	.		.	
H02			2110A	.	1.8	+2	4.0	+1	1.43	+2	8.0	+1	1.7	+2	2.22	+1	2.83	+1	.		.	
H02			2112A	.	1.21	+3	2.19	+2	3.99	+2	9.40	+2	2.67	+3	2.24	+2	8.63	+1	.		.	
H02			2113A	.	9.2	+1	2.2	+1	2.5	+1	2.4	+1	1.98	+1	3.7	+0	3.3	+0	.		.	
H02			2114A	.	2.4	+2	1.28	+2	2.27	+2	1.32	+2	4.9	+2	1.32	+2	1.68	+2	.		.	
H02			2128A	.	4.26	+1	1.26	+1	1.35	+1	2.57	+1	1.01	+1	9.14	−1	5.06	−1	.		.	
H02			2132A	.	5.66	+2	1.30	+2	2.39	+2	1.65	+2	4.95	+2	3.25	+1	3.43	+1	.		.	
H02			2136A	.	1.43	+3	4.	+2	7.31	+2	6.	+2	2.16	+3	3.43	+1	6.87	+1	.		.	
H02			2171A	.	1.1	+1	1.9	+0	1.9	+0	2.6	+0	5.54	+0	8.64	−1	2.04	+0	.		.	
H02			2173A	.	3.8	+0	1.	+0	1.2	+0	1.8	+0	4.1	+0	7.38	+0	2.71	+0	.		.	
H02			2160A	.	1.3	+1	8.1	+0	6.6	+0	3.7	+0	9.	0	2.3	+0	1.63	+0	.		.	
H02			2164A	.	1.43	+3	4.14	+2	7.13	+2	5.16	+2	6.46	+2	7.71	+1	9.79	+1	.		.	
H02			2167A	.	1.35	+3	6.89	+2	9.66	+2	6.80	+2	2.32	+3	2.29	+2	2.03	+2	.		.	
H02			2111A	.	7.3	+4	1.68	+4	2.94	+4	1.68	+4	6.71	+4	4.20	+3	6.90	+3	.		.	
H02			2126A	.	4.26	+5	1.26	+5	1.35	+5	2.57	+5	1.65	+5	9.14	+3	5.06	+3	.		.	
H02				.	.		.		.		.		.		.		.		.		.	
H02				.	.		.		.		.		.		.		.		.		.	
H02				.	.		.		.		.		.		.		.		.		.	
H02				.	.		.		.		.		.		.		.		.		.	
H02				.	.		.		.		.		.		.		.		.		.	
H02				.	.		.		.		.		.		.		.		.		.	
H02				.	.		.		.		.		.		.		.		.		.	
H02				.	.		.		.		.		.		.		.		.		.	
H02				.	.		.		.		.		.		.		.		.		.	
H02				.	.		.		.		.		.		.		.		.		.	

* Need not be filled if the preceding subseries contains the same data.

Note: The stages (or catches) are arranged sequentially in decreasing order of cut diameter sizes for up to a maximum of nine stages. The successive stages may be cyclone, impactor, final filter, etc., depending upon the configuration of the sampling train.

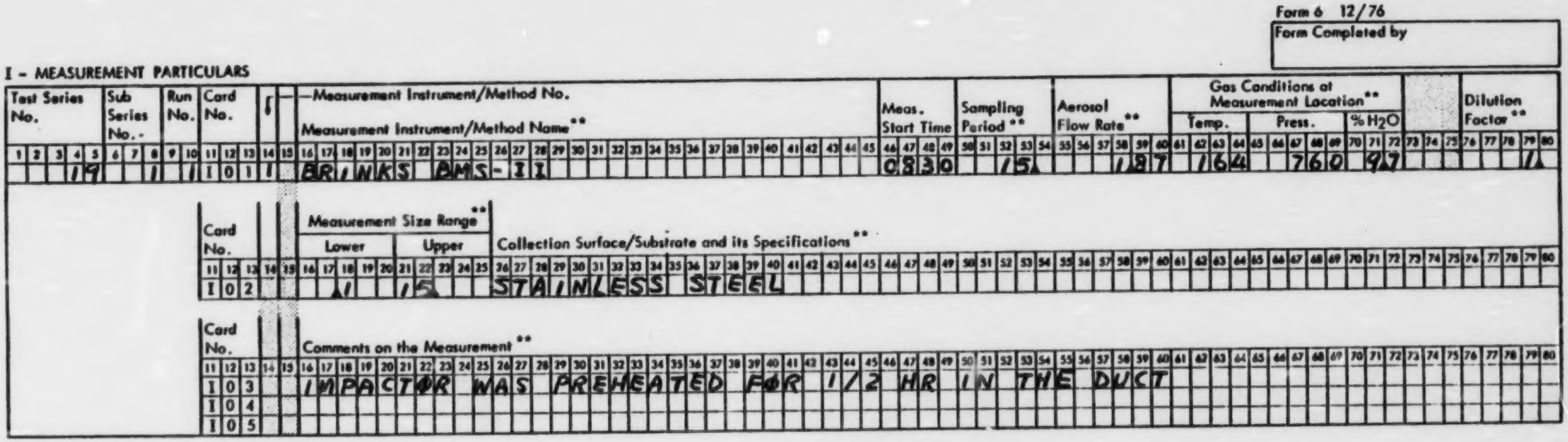
Figure 2.3-12. Sample Completed H-Cards--Chemical Composition Data.

2.3.9 Section I - Measurement Particulars - Form 6

Card Columns	Data Element	Encoding Instructions
CARD I01	(REQUIRED CARD)	
1-5	Test Series Number	Same as on Card A01.
6-8	Subseries Number	Same as Card D01.
9-10	Run Number	Enter the nonzero, sequential integer number of the run.
11-13	Card Designation	Do not change.
14	Measurement Instrument/Method Number	Each of the measurement instrument/method used for making particle size distribution measurements of a test series is given a nonzero, sequential number. Enter the number of measurement instrument/method here.
15	Blank	Leave blank.
16-45	Measurement Instrument/Method Name	Enter the name of the measurement instrument/method as text using the standard nomenclature as given in Table 2.1-14 beginning in Column 16.
46-49	Measurement Start-Time	Enter the integer starting time of measurement with this particular instrument. Use 24-hr clock (military time).
50-54	Sampling Period	Enter the measurement duration (sampling period) for this instrument as a decimal number in minutes. The decimal point is implied between card Columns 53 and 54.
55-60	Aerosol Flow Rate	Enter the sample flow rate as a decimal number in units of liters/minute for this instrument/method. The decimal point is implied between card Columns 58 and 59.

Card Columns	Data Element	Encoding Instructions
CARD I01 (Cont'd)		
61-64	Temperature	Enter the gas temperature at the measurement location (the measurement location may be the sampling location for in situ sampling) as an integer number in units of degree Celsius.
65-69	Pressure	Enter the gas pressure at the measurement location (the sampling and measurement locations will be the same for in situ sampling) as an integer number in units of mm Hg, right-justified to Column 69.
70-72	Percent H_2O	Enter the percent by volume of water vapor as a decimal number. The decimal point is specified between card Columns 71 and 72.
73-75	Blank	Leave blank.
76-80	Dilution Factor	Enter the ratio of aerosol concentration (either on mass basis or number basis) in the original gas stream to that of measured sample as a decimal number. Enter 1 in card Column 79 if the aerosol is not diluted as is the usual case when sampling with impactors. Distortions in particle size distribution due to the dilution system should be reported in the appropriate remarks. The decimal point is implied between card Columns 79 and 80.

Card Columns	Data Element	Encoding Instructions
CARD I02 (CARD NOT REQUIRED)		
16-20	Measurement Size Range (Lower)	Enter the lower diameter range of the measurement instrument/method as a decimal number in units of µm. The decimal point is implied between card Columns 17 and 18.
21-25	Measurement Size Range (Upper)	Enter the upper diameter range of the measurement instrument/method as a decimal number in units of µm. The decimal point is implied between card Columns 22 and 23.
26-80	Collection Surface/ Substrate and Its Specifications	Enter as text a description of adhesive coating used for impactor sampling, beginning in card Column 26. For instruments for which no collection surface is needed, leave blank.
CARD I03-I05 (CARDS NOT REQUIRED)		
16-80	Comments on the Measurement	Enter as text beginning in card Column 16 all the run level comments. Be brief and use abbreviations where ever possible. These comments will not be applicable to any other runs. If there are comments regarding a measuring instrument which will apply to all runs enter such comments in subseries remarks.



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Form Completed by

I - MEASUREMENT PARTICULARS

Test Series No.	Sub Series No.	Run No.	Card No.	ʃ	—	—Measurement Instrument/Method No. Measurement Instrument/Method Name**	Meas. Start Time	Sampling Period**	Aerosol Flow Rate**	Gas Conditions at Measurement Location** Temp.	Press.	%H_2O		Dilution Factor**
1-5	6-8	9-10	11-13	14	15	16-45	46-49	50-54	55-60	61-64	65-69	70-72	73-75	76-80
19	1	1	I01	1		BRINKS BMS-II	0830	15	187	164	760	9.7		1

Card No.			Measurement Size Range** Lower	Upper	Collection Surface/Substrate and its Specifications**
11-13	14	15	16-20	21-25	26-80
I02			.1	15	STAINLESS STEEL

Card No.			Comments on the Measurement**
11-13	14	15	16-80
I03			IMPACTØR WAS PREHEATED FØR 1/2 HR IN THE DUCT
I04			
I05			

Figure 2.3-13. Sample Completed I-Cards--Measurement Particulars.

2.3.10 Section J - Particulate Size Distribution Data - Form 6

Card Columns	Data Element	Encoding Instructions
CARD J01	(REQUIRED CARD)*	
1-10	Data Identification	Enter test series, test subseries, and test run numbers as on Card I01.
14	Measuremet Instrument/Method Number	Enter the same integer as on Card I01, Column 14.
15	Aerodynamic/Stokes Diameter	Enter the integer 1 for "aerodynamic" particle diameter, 0 for "Stokes" particle diameter.
16 24-25 32-33 40-41 48-49 56-57 64-65 72-73	Blank	Leave blank
17-23 26-31 34-39 42-47 50-55 58-63 66-71 74-79	Particle Size Data	Enter the boundary particle diameters as decimal numbers in units of µm in order of decreasing particle diameter. The decimal points are specified in the fourth column of each seven-column field. The number of digits reported should be able to represent the precision of the measurement. The diameters are in decreasing order of size. The first diameter is the upper boundary diameter of the aerosol which depends upon the aerosol and on the sampling train and is usually estimated.

---

* At least for the first run of each measurement instrument/method.

Card Columns	Data Element	Encoding Instructions
CARD J01 (Cont'd)		
80	Calibrated or Calculated	Enter the integer 1 for "calibrated" boundary diameters, 0 for "calculated" boundary diameters.
CARDS J02 and J03 (REQUIRED CARDS)*		
14-17 24-25 32-33 40-41 48-49 56-57 64-65 72-73 80	Blank	Leave blank
17-23 26-31 34-39 42-47 50-55 58-63 66-71 74-79	Particle Size Data	Continuation of data fields from J01 card. Same encoding instructions apply.
CARD J04 (REQUIRED CARD)		
14	Measurement Instrument/Method Number	Enter the same integer as on I01 and J01, card Column 14.
15	Mass/Number	Enter the integer 1 for "mass" or 0 for "number" depending upon which the instrument/method measures.

---

* At least for the first run of each measurement instrument/method.

Card Columns	Data Element	Encoding Instructions
CARD J04 (Cont'd)		
16 24 32 40 48 56 64 72 80	Blank	Leave blank.
17-23 25-31 33-39 41-47 49-55 57-63 65-71 73-79	Mass/Number Data	Enter the particle concentration in order of decreasing particle size boundary in scientific notation in the seven column field. The decimal point is specified in the second column of each field. The sign of exponent (either + or -) shall be entered in the fifth column and the exponent as an integer in the seventh column. Mass concentration shall be expressed in units of µg/dry normal m^3. Number concentration shall be expressed in units of number/cm^3. The mass concentration is calculated for each stage by dividing the mass by the total volume in dry normal m^3 sampled by the instrument.
CARDS J05, J06 (REQUIRED CARDS)		
14-16 24 32 40 48 56 64 72 80	Blank	Leave blank.

Card Columns	Data Element	Encoding Instructions
CARDS J05, J06 (Cont'd)		
17-32		Continuation of data fields from J04 card. Same encoding instructions apply.
25-31		
33-39		
41-47		
49-55		
57-63		
65-71		
73-80		

J - PARTICULATE SIZE DISTRIBUTION DATA

Test Series No. (1–5)	Sub Series No. (6–8)	Run No. (9–10)	Card No. (11–13)	Measurement Instrument/Method No. (14)	Aerodynamic/Stokes Diameter (1 or 0) (15)	Particle Size Data** (16–23)	(24–31)	(32–39)	(40–47)	(48–55)	(56–63)	(64–71)	(72–79)	Calib or Calc (1 or 0) (80)
19	1	1	J01	1	1	15.	7.5	3.807	2.299	1.545	.79	.409	.1	0
			J02			.	.	.	.	.	.	.	.	
			J03			.	.	.	.	.	.	.	.	

Card No. (11–13)	Measurement Instrument/Method No. (14)	Mass/No. (1 or 0) (15)	Mass/Number Data ± (16–23)	± (24–31)	± (32–39)	± (40–47)	± (48–55)	± (56–63)	± (64–71)	± (72–79)	(80)
J04	1	1	2.999+5	1.130+5	9.343+4	4.564+4	2.781+4	8.202+3	1.854+4	.	
J05			.	.	.	.	.	.	.	.	
J06			.	.	.	.	.	.	.	.	

** Need not be filled if the preceding subseries or run with this instrument/method contains the same data.

Figure 2.3-14. Sample Completed J-Cards--Particulate Size Distribution Data.

SECTION 3

OFF-LINE REQUEST PROCEDURE

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3.2 Use of Request Command Catalog 3.2-1

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3.4 FPEIS User Support 3.4-1

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SECTION 3

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3.0 Introduction

The purpose of this section and the section to follow is to provide users with instructions for submitting new test data and for retrieving existing data from the FPEIS data base. This section addresses data submittal and retrieval procedures for those users who do not have access to the EPA National Computer Center at Research Triangle Park, North Carolina. Such users will submit requests in writing to the EPA project officer for action. The response by IERL will depend largely upon the nature of the request. Routine data updates or retrieval requests from the FPEIS Catalog of Request Commands will be handled promptly. Special data retrieval requests which require program development work will take longer. The length of time required to respond to such requests will be a function of the complexity of the requests.

3.1 Submittal of New Data

All new source testing data for the FPEIS should be sent to the EPA project officer, IERL-RTP, for input to the data base. These data must be encoded on the FPEIS data input forms in accordance with the data input instructions described previously. The user shall also send a cover letter identifying each test series, subseries, and run in the data set submitted. Remember: unique test series numbers will be assigned to each series by the FPEIS data base administrator from a master file listing. It is not necessary for the user to encode a series number on the data form; however, subseries and run numbers must be encoded sequentially on the form.

Data for input to the FPEIS data base should be sent to the following address:

FPEIS Project Officer
U.S. Environmental Protection Agency
Special Studies Staff (MD-63)
Industrial Environmental Research Laboratory
Research Triangle Park, North Carolina 27711

When the data set has been received by IERL-RTP, a letter of acknowledgement will be sent to the submittor (see Figure 3.1-1). The letter will also identify the unique series number(s) assigned to his data set.

The user is requested to use quality data control in preparing data forms to be submitted. Incomplete (e.g., less than minimum) or illegible data forms will be returned to the user for correction (see Figure 3.1-2).

As soon as the data submitted has been processed by the EDIT program, a listing of the data will be sent to the submittor for verification of the data. This listing will include calculations of particle size distributions. Any data errors found should be noted, and corrections should be sent in writing to the FPEIS project officer. A letter of verification will be sent to the submittor and will be followed by a listing of the corrected data set for the submittor's use. If no errors are found, the submittor should acknowledge this in writing to the FPEIS project officer. When all quality assurance procedures have been satisfied, the complete data set will be entered into the FPEIS data base.

Dr. John A. Doe
Ozone National Laboratory
1234 Anystreet Drive
Hometown, PA 12345

Dear Dr. Doe:

This letter is to acknowledge our receipt of source testing data from you for the Fine Particle Emissions Information System (FPEIS). The data forms have been examined and several omissions of key data were noted. We are returning the data forms to you for correction. The omitted data items have been noted on the data forms.

If you have any questions regarding the data forms, please feel free to call me. Thank you very much for your support of the FPEIS.

Sincerely,

FPEIS Project Officer
Special Studies Staff

Figure 3.1-1. Sample FPEIS Data Submittal Acknowledgement Memo.

Dr. John A. Doe
Ozone National Laboratory
1234 Anystreet Drive
Hometown, PA 12345

Dear Dr. Doe:

This letter is to acknowledge our receipt of source testing data for the Fine Particle Emissions Information System (FPEIS) from you. The data forms have been examined and have been found to be acceptable for input to the FPEIS database.

In a short time, we will return to you a print-out containing the data which you have submitted for your review and comment. The test series numbers which have been assigned to your data are: 61, 62, 63, and 64.

Thank you very much for your support of the FPEIS. Please feel free to call me if you have any questions.

Sincerely,

FPEIS Project Officer
Special Studies Staff

Figure 3.1-2. Sample FPEIS Data Submittal Error Memo.

3.2 Use of Request Command Catalog

Section 5.0 contains a catalog of System Request Commands (SRC) which may be utilized to retrieve FPEIS data in a specified manner. Each request command is described separately and has its own requirements for data input or qualification by the user. To simplify their use, the request commands have been numbered sequentially beginning with C3000. In this way, the user needs only to identify the command number in order to request a certain procedure.

FPEIS System Request Commands should be requested by off-line users by the standard request form shown in Figure 3.2-1. The requestor should complete this form in accordance with the requirements of the request system command and send the completed form to the following address:

FPEIS Project Officer
U.S. Environmental Protection Agency
Special Studies Staff (MD-63)
Industrial Environmental Research Laboratory
Research Triangle Park, North Carolina 27711

Users must use separate request forms for different runs even if the same command is being used repeatedly. For example, if a user wishes to interrogate the data base according to a specific access criteria, any change to that criteria must be shown on a separate request form. Receipt of request forms will be acknowledged to the requestor in writing. If there are any errors in the request or some information is missing, the form will be returned to the requestor for correction and resubmittal. When the request has been processed, the output will be sent to the requestor for verification.

The System Request Command Form Shown in Figure 3.2-1 may be duplicated by the user from this document.

REQUESTED BY: ____________________

____

____
(Street/P.O. Box)

____
(City) (State) (Zip)

____
(Phone)

SYSTEM COMMAND NUMBER: ____________________

DATE SUBMITTED: ____________________ DATE NEEDED: ____________________

COMMAND INPUT AND/OR QUALIFICATION DATA (List as required by Command Input Instructions):

(Attach Additional Sheets If Needed)

Figure 3.2-1. System Request Command Form.

3.3 Special Data Retrieval Requests

It is recognized at the outset that the System Request Commands are not likely to be diverse enough to satisfy all user needs for data. For this reason, a special data retrieval request category was established. There is no specific form to be used for special requests; there is merely a set of general guidelines to follow in preparing the request. These guidelines are as follows:

1. Be explicit: Be thoroughly familiar with the FPEIS data base structure. Identify each data base element to be sorted and/or retrieved by name. Should additional work on the request be required, consultation with the requestor will be initiated, and, upon correction, the printout will be returned to the requestor for verification.

2. Plan the request: Be sure that the access criteria applies to the proper type of data element. Remember that only key values may be retrieved directly and that nonkey values must be qualified for data access (see Section 6.6). Specify all needed qualifications and identify all input data for comparative evaluation.

3. Define the output: Determine how you wish the data to be displayed on output. Identify how data elements are to be ordered. Specify column headings. Define any calculations to be performed on the accessed data.

The completed definition of the request should be sent to the FPEIS project officer at IERL-RTP. The user should be sure to include his telephone number with the request. If there are any problems encountered with the request, the user will be contacted by telephone to resolve the problem.

When the request has been received, a letter of acknowledgement will be sent to the requestor. The letter will include a preliminary estimate of the length of time required to process the request. As emphasized previously, the length of time needed to process a special request will depend upon the complexity of the request. The simpler the request, the faster it can be processed.

If no problems are encountered that require consultation with the requestor, the results will be sent to the requestor when the processing is completed. The requestor should review the output to verify that it satisfies the request. If it does not, the printout should be returned with corrections to IERL for reworking. If the printout is satisfactory, the requestor should notify the FPEIS project officer of his acceptance.

3.4 FPEIS User Support

The FPEIS is supported by IERL-RTP. The administrative functions relative to the FPEIS are provided by the Special Studies Staff in IERL. Developmental work on new concepts for sorting and retrieval programs is performed by government contractors under direction of the FPEIS project officer in the Special Studies Staff.

Any questions regarding the FPEIS should be directed in writing to the following address:

FPEIS Project Officer
U.S. Environmental Protection Agency
Special Studies Staff (MD-63)
Industrial Environmental Research Laboratory
Research Triangle Park, North Carolina 27711

or by telephone to:

FTS 629-2745
Commercial 919-549-8411, Extension 2745

SECTION 4

ON-LINE REQUEST PROCEDURE

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4.2	Remote Batch Terminal Operation	UG-4.2-1
4.2.1	Accessing the FPEIS Data Base	UG-4.2.1-1
4.2.2	Invoking FPEIS System Request Commands.	UG-4.2.2-1
4.3	Summary	UG-4.3-1
4.4	FPEIS User Support.	UG-4.4-1

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4.0 Introduction

The procedure described in this section may be used by qualified NCC users to access the FPEIS data base directly through an interactive data communications terminal or a remote batch terminal. Qualified users are defined as those who have valid account numbers and site identification codes as specified by NCC User Services at Research Triangle Park, North Carolina. For information regarding User Services, the user is directed to Section 6.1.4.

On-line users of the FPEIS are assumed to have a working knowledge of UNIVAC demand processing and SYSTEM 2000 natural language. Any user not thoroughly accustomed to them is urged to request information through the off-line procedures route described in the previous section.

On-line users are granted READ-ONLY access to the FPEIS data base. No updating of data are permitted. New data input must be submitted through the EPA project officer. In the READ-ONLY mode, the user may retrieve for sorting and evaluation any data stored in the system. The user may take advantage of the wide array of features offered by SYSTEM 2000 for data sorting and retrieval. A general description of SYSTEM 2000 is included in Section 6.2. For reference purposes, the FPEIS data base definition is given in Section 6.5, and lists of key and nonkey data elements are given in Section 6.6.

4.1 Interactive Terminal Operation

(To be added at a later date)

4.2 Remote Batch Terminal Operation

Since the NCC UNIVAC 1110 computer supports a variety of remote batch (RJE) computer terminals, the user is directed to the operating guide of his particular terminal for specific instructions for establishing communications with the NCC. A list of RJE terminals currently supported by the NCC is given in Section 6.1.4.

Telephone access numbers to the NCC may be obtained from NCC User Services (see Section 6.1.4).

4.2.1 Accessing the FPEIS Data Base

In order to access the FPEIS data base in the batch mode, the user must either use a cataloged FPEIS System Request Command procedure or enter the data base in SYSTEM 2000 Queue Access mode. Use of the SRC in batch mode is discussed in the next section. The use of Queue Access will require the following general computer card arrangement:

```
Card Column 1           8

            @RUN,a      account number,qualifier, parameters

            @ADD        FPEIS*FPEIS.START

            QUEUE:

(SYSTEM 2000 commands on cards in the order in which they are to be

processed.)

            TERMINATE:

            EXIT:

            @FIN
```

Details on use of the Queue Access module may be found in the SYSTEM 2000 Reference Manual.[1]

---

[1] SYSTEM 2000 Reference Manual, MRI Systems Corporation (August 1974).

4.2.2 Invoking FPEIS Request Commands

Section 5 of this document contains a list (or catalog) of standardized user request procedures, called System Request Commands (SRC), which may be utilized to retrieve data in a certain manner. The specific instructions for using the commands are given in Section 5. Many of these commands utilize the STRING Command feature of SYSTEM 2000. In essence, the string commands are a compact, uniquely-identified list of SYSTEM 2000 instructions which may be initiated by a single command.

Batch users of the FPEIS may invoke the System Request Commands by following the procedure given in the USER PROCEDURE for batch mode. It should be noted that several SRC's are designed specifically for use in batch processing mode only. In most cases, any SRC which is executable in the demand processing mode is also executable in the batch mode.

4.3 Summary

(To be added at a later date)

4.4 FPEIS User Support

The FPEIS is supported by IERL-RTP. The administrative functions relative to the FPEIS are provided by the Special Studies Staff in IERL. Developmental work on new concepts for sorting and retrieval programs is performed by government contractors under direction of the FPEIS project officer in the Special Studies Staff.

Any questions regarding the FPEIS should be directed in writing to the following address:

FPEIS Project Officer
U.S. Environmental Protection Agency
Special Studies Staff (MD-63)
Industrial Environmental Research Laboratory
Research Triangle Park, North Carolina 27711

or by telephone to:

FTS 629-2745
Commercial 919-549-8411, Extension 2745

SECTION 5

CATALOG OF SYSTEM REQUEST COMMANDS

CONTENTS

Number			Page
5.0	Introduction.		5.0-1
	C3000	FPEIS Summary Report - Complete	C3000-1

5.0 Introduction

In order to aid users in the use of the FPEIS, a catalog of pre-defined (or "canned") sorting and retrieval procedures has been developed for the FPEIS. These procedures are called System Request Command, or SRC's. Each SRC has a unique indentifier beginning with the prefix "C3." For some SRC's which utilize the SYSTEM 2000 STRING command feature, the SRC number or identifier will have a special significance that will be discussed in the user instructions for that SRC. In general, the SRC number is a convenient way of identifying the specific procedures.

Each entry in the SRC catalog is identified by the SRC number and the title for the procedure. A brief abstract on the nature of the SRC is given, and any input data required from the user are identified. Also, any qualification needed for NONKEY data elements is given. A step-by-step procedure for executing the procedure is given both for demand users and for batch users. A sample output produced by the SRC is included as well as any comments which may be helpful to the user in executing the command.

As additional SRC's are added to the catalog, this section will be updated.

SYSTEM REQUEST COMMAND NUMBER: C3000

TITLE: FPEIS SUMMARY REPORT - COMPLETE

ABSTRACT:

This SRC produces a complete listing of the contents of the FPEIS data base. The data are listed in the standard FPEIS Summary Report format. The data are in order of source category, then by series, subseries, and run. This SRC produces several thousand pages of output and is available only to batch users.

INPUT DATA REQUIRED:

None

DATA ELEMENT QUALIFICATION REQUIRED:

None

INTERACTIVE TERMINAL PROCEDURE:

Not available to demand users.

BATCH PROCESSING PROCEDURE

The complete FPEIS Summary Report may be obtained by submitting the following sequence of control cards:

```
(Valid @RUN card)*
@ADDbbFPEIS*FPEIS.REPORT
@FIN
```

where b denotes one blank card column.

---

* The @RUN card contains job priority, run time limit, accounting data. This information must be supplied by the user. Refer to "NCC User's Reference Manual," U.S. Environmental Protection Agency, Data Systems Division, National Computer Center, Research Triangle Park, North Carolina, April 1974 (revised).

COMMENT:

Implementation of this procedure will result in the printing of a large volume of computer paper (several THOUSAND pages). Users are urged to submit an "off-line" request so that the printing may be done locally at Research Triangle Park, North Carolina. The output would be shipped to the user.

SAMPLE OUTPUT:

A sample output of one test series is given on the following pages.

```
                                     FINE PARTICULATE EMISSIONS INFORMATION SYSTEM
                                                FPEIS SUMMARY REPORT
                                     ----------------------------------------------

TEST SERIES NO:   19   TEST SERIES AT SITE FROM 12/04/73 TO 12/14/73    BY: MIDWEST RESEARCH INST., KANSAS CITY, MO.
                       REFERENCE: SHANNON, L.J., ET AL., EPA-650/2-74-073, AUG. 74

 SOURCE CHARACTERISTICS-------------------------

        NEDS SCC CATEGORY:              EXTCOMB BOILER                   SITE NAME     MERAMEC PLANT
                 OPERATION CLASS:       ELECTRIC GENERATN                SOURCE NAME   BOILER UNIT 1
                 FEED MATERIAL CLASS:   SOLID WASTE/COAL                 ADDRESS       8200 FINE ROAD
                 OPERATION MODE CLASS:  G.T. 100MMBTU/HR                               ST. LOUIS           MO 63120
                                                                         UTM ZONE AND X-Y COORDS: 15    725.0   475.0


CONTROL DEVICE(S) CHARACTERISTICS-----------------

        UNIT 1
        DEVICE GENERIC TYPE: ESP                               COMMERCIAL NAME: ELECTROSTATIC PRECIPITATOR
               CATEGORY:      PARALLEL PLATE ESP               MANUFACTURER:   RESEARCH COTTRELL
               CLASS:         CONVENTIONAL
               DESCRIPTION:   2-UNITS IN PARALLEL WITH COMMON INLET DUCT AND SEPARATE OUT-
                                         LET DUCTS.

        CONTROL DEVICE(S) DESIGN PARAMETERS - -
                       1) ELECTRODE AREA               5174.5 M2
                       2) CORONA WIRE DIA.             2.8 MM
                       3) PLATE TO PLATE SPACING       238 MM

TEST SERIES REMARKS-------------------------------

        IMPACTOR CUT POINTS COMPUTED FROM RANZ AND WONG THEORY
```

```
TEST SERIES NO:    19    SUBSERIES NO:  1          INLET                          TEST DATE: 12/04/73  FROM 08:30 TO 11:00 HOUR

TEST CHARACTERISTICS--------------------------------

        SOURCE OPERATING MODE:  COAL+REFUSE BURNING              SOURCE OPERATING RATE:  120 MW            PCT DESIGN CAPACITY:100.
        FEED MATERIAL:          ORIENT 6 COAL AND MUN. REFUSE   FEED MATERIAL COMPOSITION: 9% REFUSE

        CONTROL DEVICE INLET         SAMPLING POINT DESCRIPTION: ABOUT 2M FROM BEND (RAD. OF CURV.=2.3M)   % ISOKINETIC: 100

        PROCESS CONDITIONS:   VOL FLOW=   169.0 DNM3/S  VELOCITY=  20.4 M/S  T=  164 C   P=   760 MMHG   WATER VAP %VOL=  8.5

        GAS COMPOSITION:      ORSAT-            CO2= 14.50 %   CO=   .01 %   O2=  6.50 %   N2= 79.00 %
                              TRACE GASSES(PPM)-SO2=900, SO3=0, NO=220

CONTROL DEVICE(S) OPERATING PARAMETERS ------------
                         1) VOLUMETRIC FLOW RATE           230.1 M3/S
                         2) APPLIED VOLTAGE                32 KV
                         3) CORONA CURRENT                 253 MAMP
                         4) POWER                          8 KW
                         5) SPARK RATE                     115/MIN


PARTICULATE MASSTRAIN RESULTS ----------------

        FRONT HALF= 5.210E+05 UG/DNM3   TOTAL= 4.780E+06   COMMENTS: EPA METHOD 5 TRAIN


PARTICULATE PHYSICAL PROPERTIES ------------------

        DENSITY= 2.27 GM/CC ASSUMED  RESISTIVITY= 2.30E+11 OHM-CM ASSUMED



CHEMICAL COMPOSITION DATA--------------------------

        PARTICULATE SAMPLER UNCALIBRATED

                                                                      SAMPLER STAGE CUT POINTS (UM)
                                                                      ------------------------------
                                       0        1        2        3        4        5        6        7        8        9
                                    ------   ------   ------   ------   ------   ------   ------   ------   ------   ------
                                     15.      7.5      3.8      2.3      1.5      .79      .41      .1

                                                                    CHEMICAL CONCENTRATION IN (UM/DNM3)
        CHEMICAL NAME               MAS TRN   STAGE    STAGE    STAGE    STAGE    STAGE    STAGE    STAGE    STAGE    STAGE
            ANALYSIS METHOD         /POOLD      1        2        3        4        5        6        7        8        9
        --------------------------  ------   ------   ------   ------   ------   ------   ------   ------   ------   ------

                                              2.1 +1   4.6 +0   7.6 +0   4.1 +0   4.7 +0   1.79+0   4.81+0
         1) BERYLLIUM
             ATOMIC ABSORPTION                1.8 +2   4.0 +1   1.43+2   8.0 +1   1.17+2   2.22+1   2.83+1
         2) CADMIUM
             ATOMIC ABSORPTION                1.21+3   2.14+2   3.99+2   9.40+2   2.68+3   2.24+2   8.63+1
         3) CHROMIUM
             ATOMIC ABSORPTION                4.2 +1   2.2 +1   2.5 +1   2.4 +1   4.9 +1   3.7 +0   3.3 +0
         4) COBALT
             ATOMIC ABSORPTION                2.4 +2   1.28+2   2.27+2   1.32+2   4.91+2   1.32+2   1.68+2
         5) COPPER
             ATOMIC ABSORPTION
```

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```
  6) LEAD                                      4.26+1   1.26+1   1.35+1   2.57+1   1.05+1   9.14-1   5.06-1
       ATOMIC ABSORPTION
  7) MANGANESE                                 5.66+2   1.30+2   2.39+2   1.65+2   4.96+2   3.25+1   3.43+1
       ATOMIC ABSORPTION
  8) NICKEL                                    1.43+3   4.  +2   7.31+2   6.  +2   2.14+3   3.43+1   6.87+1
       ATOMIC ABSORPTION
  9) TELLURIUM                                 1.1 +1   1.9 +0   1.9 +0   2.6 +0   5.5 +0   8.64-1   2.04+0
       ATOMIC ABSORPTION
 10) THALLIUM                                  3.4 +0   1.  +0   1.2 +0   1.8 +0   4.1 +0   1.38+0   2.71+0
       ATOMIC ABSORPTION
 11) TIN                                       1.3 +1   8.1 +0   6.6 +0   3.7 +0   9.  +0   2.3 +0   1.63+0
       ATOMIC ABSORPTION
 12) VANADIUM                                  1.43+3   4.14+2   7.13+2   5.16+2   6.46+2   7.71+1   9.79+1
       ATOMIC ABSORPTION
 13) ZINC                                      1.35+3   6.89+2   9.66+2   6.80+2   2.32+3   2.29+2   2.03+2
       ATOMIC ABSORPTION
 14) CALCIUM                                   7.3 +4   1.68+4   2.94+4   1.68+4   6.71+4   4.20+3   6.90+3
       ATOMIC ABSORPTION
 15) IRON                                      4.26+5   1.26+5   1.35+5   2.57+5   1.05+5   9.14+3   5.06+3
       ATOMIC ABSORPTION

SUBSERIES REMARKS-----------------------------------
```

```
TEST SERIES NO:   19   SUBSERIES NO:   1   RUN NO:  1   CONTROL DEVICE INLET

MEASUREMENT PARTICULARS-------------------------------

        MEAS. INST/METHOD: 1  BRINKS BMS-II                  (UNCALIBRATED)     SIZE RANGE:  .100 TO 15.000 UM
        COLLECTION SURFACE/SUBSTRATE: STAINLESS STEEL
        MEAS. START TIME:  930   SAMPLING PERIOD:   15.0 MIN    SAMPLING RATE:    1.87 LPM    DILUTION FACTOR:   1.0

        GAS SAMPLING CONDITIONS: TEMP=  164 C         PRESSURE=   760 MMHG     WATER VAP %VOL =  9.7

        COMMENTS ON THE MEASUREMENT:



PARTICLE SIZE DISTRIBUTION DATA
-------------------------------                                                              PARTICLE DENSITY= 2.27 GM/CC

 AERODYNAMIC DIA (UM)  PARTICLE DIA (UM)          DM          DM/DLDAF       DS         DS/DLDAF        DN         DN/DLDAF       CUM M
 --------------------  -----------------       (UG/DNM3)     (UG/DNM3)    (UM2/CC)     (UM2/CC)     (NO./CC)      (NO./CC)        (%)
   BNDRY     MID PT     BNDRY     MID PT

  15.000                9.929
   7.500      10.607    4.951      7.011      2.999E+05    9.962E+05    1.131E+05    3.756E+05    7.321E+02    2.432E+03
   3.807       5.343    2.500      3.518      1.130E+05    3.837E+05    8.489E+04    2.883E+05    2.183E+03    7.413E+03
   2.299       2.958    1.500      1.936      9.343E+04    4.255E+05    1.275E+05    5.822E+05    1.082E+04    4.942E+04
   1.545       1.885    1.000      1.225      4.564E+04    2.644E+05    9.851E+04    5.707E+05    2.091E+04    1.211E+05
    .790       1.105     .500       .707      2.781E+04    9.547E+04    1.039E+05    3.568E+05    6.613E+04    2.270E+05
    .409        .568     .250       .354      8.202E+03    2.869E+04    6.132E+04    2.145E+05    1.562E+05    5.463E+05
    .100        .202     .054       .116      1.854E+04    3.031E+04    4.237E+05    6.926E+05    1.008E+07    1.648E+07

                          TOTAL MASS CONC=  6.065E+05     TOTAL SURF CONC=  1.013E+06     TOTAL NUM CONC=  1.034E+07
```

```
TEST SERIES NO:   19   SUBSERIES NO:   1   RUN NO:  2   CONTROL DEVICE INLET

MEASUREMENT PARTICULARS------------------------------

        MEAS. INST/METHOD: 1  BRINKS BMS-II                    (UNCALIBRATED)     SIZE RANGE:  .100 TO 15.000 UM
        COLLECTION SURFACE/SUBSTRATE: STAINLESS STEEL
        MEAS. START TIME: 1030   SAMPLING PERIOD:   20.0 MIN    SAMPLING RATE:    1.87 LPM    DILUTION FACTOR:   1.0

        GAS SAMPLING CONDITIONS: TEMP=  158 C         PRESSURE=   760 MMHG     WATER VAP %VOL =  9.0

        COMMENTS ON THE MEASUREMENT:



 PARTICLE SIZE DISTRIBUTION DATA
 -------------------------------                                                   PARTICLE DENSITY= 2.27 GM/CC

  AERODYNAMIC DIA (UM)   PARTICLE DIA (UM)         DM          DM/DLDAE        DS         DS/DLDAE        DN         DN/DLDAE       CUM M
  --------------------   -----------------     (UG/DNM3)    (UG/DNM3)     (UM2/CC)     (UM2/CC)      (NO./CC)      (NO./CC)       (%)
    BNDRY      MID PT     BNDRY     MID PT

    15.000                 9.929
     7.500     10.607      4.951     7.011     2.497E+06    8.295E+06    9.413E+05    3.127E+06    6.095E+03    2.025E+04
     3.807      5.343      2.500     3.518     4.783E+05    1.624E+06    3.593E+05    1.220E+06    9.240E+03    3.138E+04
     2.299      2.958      1.500     1.936     1.464E+05    6.706E+05    2.005E+05    9.154E+05    1.702E+04    7.770E+04
     1.545      1.845      1.000     1.225     4.208E+04    2.438E+05    9.082E+04    5.262E+05    1.928E+04    1.117E+05
      .790      1.105       .500      .707     3.455E+03    1.186E+04    1.291E+04    4.432E+04    8.216E+03    2.821E+04
      .409       .568       .250      .354     0.           0.           0.           0.           0.           0.
      .100       .202       .054      .116     8.794E+03    1.438E+04    2.010E+05    3.285E+05    4.782E+06    7.817E+06

                                 TOTAL MASS CONC=  3.177E+06     TOTAL SURF CONC=  1.806E+06     TOTAL NUM CONC=  4.842E+06
```

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```
TEST SERIES NO:    19    SUBSERIES NO:  2           OUTLET                           TEST DATE: 12/04/73  FROM 08:40 TO 11:00 HOUR

TEST CHARACTERISTICS--------------------------------

        SOURCE OPERATING MODE:  COAL+REFUSE BURNING             SOURCE OPERATING RATE:  120 MW           PCT DESIGN CAPACITY:100.
        FEED MATERIAL:          ORIENT 6 COAL AND MUN. REFUSE   FEED MATERIAL COMPOSITION: 9% REFUSE

        CONTROL DEVICE OUTLET         SAMPLING POINT DESCRIPTION: SAMPLING PORTS IMMEDIATELY BEHIND AN ELB  % ISOKINETIC: 100

        PROCESS CONDITIONS:   VOL FLOW=   141.7 DNM3/S  VELOCITY=  15.7 M/S  T=  166 C   P=   760 MMHG   WATER VAP %VOL=  8.5

        GAS COMPOSITION:     ORSAT-             CO2= 14.50 %   CO=   .01 %   O2=  6.50 %   N2= 79.00 %
                             TRACE GASSES(PPM)-SO2=900. SO3=0. NO=220

CONTROL DEVICE(S) OPERATING PARAMETERS ------------
                        1) VOLUMETRIC FLOW RATE           230.1 M3/S
                        2) APPLIED VOLTAGE                32 KV
                        3) CORONA CURRENT                 253 MAMP
                        4) POWER                          8 KW
                        5) SPARK RATE                     108/MIN

PARTICULATE MASSTRAIN RESULTS -----------------

        FRONT HALF= 1.340E+04 UG/DNM3   TOTAL= 2.067E+05   COMMENTS:

PARTICULATE PHYSICAL PROPERTIES -------------------

        DENSITY= 2.27 GM/CC ASSUMED  RESISTIVITY= 2.40E+11 OHM-CM ASSUMED


SUBSERIES REMARKS-----------------------------------
```

```
TEST SERIES NO:   19   SUBSERIES NO:   2   RUN NO:  1   CONTROL DEVICE OUTLET

MEASUREMENT PARTICULARS-------------------------------

        MEAS. INST/METHOD: 2  ANDERSEN MODEL IV            (UNCALIBRATED)     SIZE RANGE:  .100 TO 15.000 UM
        COLLECTION SURFACE/SUBSTRATE: GLASS FIBER FILTER
        MEAS. START TIME:  840    SAMPLING PERIOD:   20.0 MIN    SAMPLING RATE:   20.22 LPM    DILUTION FACTOR:   1.0

        GAS SAMPLING CONDITIONS: TEMP=  166 C         PRESSURE=   760 MMHG      WATER VAP %VOL =  8.5

        COMMENTS ON THE MEASUREMENT:



 PARTICLE SIZE'DISTRIBUTION DATA
 -------------------------------                                                           PARTICLE DENSITY= 2.27 GM/CC

  AERODYNAMIC DIA (UM)  PARTICLE DIA (UM)          DM          DM/DLDAE       DS          DS/DLDAE       DN          DN/DLDAE       CUM M
  --------------------  -----------------      (UG/DNM3)     (UG/DNM3)    (UM2/CC)      (UM2/CC)     (NO./CC)      (NO./CC)        (%)
     BNDRY     MID PT     BNDRY     MID PT

    15.000                9.929
    11.500     13.134     7.606     8.690      1.476E+04     1.279E+05    4.489E+03     3.891E+04    1.892E+01     1.640E+02
     7.180      9.067     4.739     6.003      1.387E+04     6.780E+04    6.107E+03     2.985E+04    5.393E+01     2.636E+02
     4.860      5.907     3.199     3.893      1.582E+04     9.334E+04    1.074E+04     6.337E+04    2.255E+02     1.331E+03
     3.310      4.011     2.171     2.635      9.097E+03     5.454E+04    9.125E+03     5.470E+04    4.183E+02     2.508E+03
     2.120      2.649     1.381     1.731      1.433E+04     7.406E+04    2.188E+04     1.131E+05    2.323E+03     1.201E+04
     1.060      1.499      .679      .969      1.508E+04     5.009E+04    4.117E+04     1.368E+05    1.398E+04     4.644E+04
      .650       .830      .408      .526      4.253E+03     2.002E+04    2.136E+04     1.006E+05    2.456E+04     1.156E+05
      .440       .535      .270      .332      2.397E+03     1.414E+04    1.909E+04     1.126E+05    5.515E+04     3.254E+05
      .100       .210      .054      .120      4.750E+03     7.382E+03    1.044E+05     1.623E+05    2.298E+06     3.571E+06

                                  TOTAL MASS CONC=  9.436E+04     TOTAL SURF CONC=  2.384E+05     TOTAL NUM CONC=  2.395E+06
```

```
TEST SERIES NO:   19   SUBSERIES NO:   2   RUN NO:  2   CONTROL DEVICE OUTLET

MEASUREMENT PARTICULARS------------------------------

        MEAS. INST/METHOD: 3  CLIMET MODEL CI-208 OPC        ( CALIBRATED)     SIZE RANGE:  .650 TO  1.500 UM
        COLLECTION SURFACE/SUBSTRATE:
        MEAS. START TIME:  930   SAMPLING PERIOD:    1.0 MIN    SAMPLING RATE:    7.08 LPM    DILUTION FACTOR:   1.0

        GAS SAMPLING CONDITIONS: TEMP=   25 C         PRESSURE=   760 MMHG     WATER VAP %VOL = 12.0

        COMMENTS ON THE MEASUREMENT:



 PARTICLE SIZE DISTRIBUTION DATA
 ------------------------------                                                      PARTICLE DENSITY= 2.27 GM/CC

 AERODYNAMIC DIA (UM)  PARTICLE DIA (UM)          DM          DM/DLDAF       DS         DS/DLDAF        DN         DN/DLDAF      CUM M
 --------------------  -----------------      (UG/DNM3)      (UG/DNM3)    (UM2/CC)     (UM2/CC)     (NO./CC)     (NO./CC)      (%)
   BNDRY     MID PT     BNDRY     MID PT

   2.299                1.500
   1.590      1.912     1.030     1.243        6.300E+02    3.935E+03   1.340E+03    8.368E+03    2.760E+02    1.724E+03
   1.319      1.448      .850      .936        3.897E+03    4.790E+04   1.101E+04    1.353E+05    4.002E+03    4.919E+04
   1.017      1.158      .650      .743        5.257E+03    4.652E+04   1.869E+04    1.654E+05    1.077E+04    9.530E+04

                           TOTAL MASS CONC=  9.784E+03     TOTAL SURF CONC=  3.104E+04     TOTAL NUM CONC=  1.505E+04
```

```
TEST SERIES NO:   19   SUBSERIES NO:   2   RUN NO:  3   CONTROL DEVICE OUTLET

MEASUREMENT PARTICULARS------------------------------

        MEAS. INST/METHOD: 4  CN COUNTER/DIFF. BATTERY        ( CALIBRATED)     SIZE RANGE:  .010 TO   .200 UM
        COLLECTION SURFACE/SUBSTRATE:
        MEAS. START TIME: 1040   SAMPLING PERIOD:    0.0 MIN    SAMPLING RATE:    0.00 LPM    DILUTION FACTOR:   1.0

        GAS SAMPLING CONDITIONS: TEMP=    0 C         PRESSURE=     0 MMHG     WATER VAP %VOL =  0.0

        COMMENTS ON THE MEASUREMENT:



PARTICLE SIZE DISTRIBUTION DATA
-------------------------------
                                                                                 PARTICLE DENSITY= 2.27 GM/CC

AERODYNAMIC DIA (UM)  PARTICLE DIA (UM)          DM          DM/DLDAF        DS         DS/DLDAF        DN        DN/DLDAF      CUM M
--------------------  -----------------      (UG/DNM3)      (UG/DNM3)     (UM2/CC)      (UM2/CC)     (NO./CC)     (NO./CC)      (%)
  BNDRY     MID PT     BNDRY     MID PT

   .289                 .172
   .181      .229       .103      .133       7.007E+02     3.436E+03    1.391E+04    6.823E+04    2.500E+05    1.226E+06
   .117      .146       .064      .081       2.672E+02     1.428E+03    8.698E+03    4.648E+04    4.200E+05    2.244E+06
   .029      .059       .014      .030       1.785E+01     2.956E+01    1.576E+03    2.610E+03    5.600E+05    9.273E+05
   .017      .022       .008      .011       1.972E-01     8.579E-01    4.926E+01    2.143E+02    1.400E+05    6.089E+05

                               TOTAL MASS CONC=  9.859E+02     TOTAL SURF CONC=  2.424E+04     TOTAL NUM CONC=  1.370E+06
```

SECTION 6

APPENDIX

CONTENTS

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6.1	Description of National Computer Center.	UG-6.1-1
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SECTION 6.1

DESCRIPTION OF EPA NATIONAL COMPUTER CENTER

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6.1.1 Introduction

The Fine Particle Emissions Information System (FPEIS) is resident on EPA's National Computer Center (NCC) system at Research Triangle Park, North Carolina. The NCC is a general purpose data center, supporting both scientific and administrative application areas, and provides interactive as well as batch capabilities. Remote users have access to the NCC via a national system of low speed and high speed data communication lines. Since some FPEIS users may be qualified to access the NCC, and in so doing access the FPEIS data base directly, this section has been added to the report to acquaint users or potential users of the FPEIS with some of the capabilities of the NCC.

The National Computer Center is organizationally structured under the Management Information and Data Systems Division, of the Office of Administration, EPA headquarters in Washington. NCC services are provided by two branches: the Analysis and Support Branch and the Computer Systems Branch. The Analysis and Support Branch provides ADP support service to the user community while the Computer Systems Branch is responsible for maintaining the computing utility. The NCC staff is augmented by a facility operations contractor who provides technical support in the areas of machine operations, system programming, and user support services. Sperry-Univac, the computer system vendor, maintains a resident staff of hardware engineers for data preparation services and data base management consultation.

In the following sections, descriptions have been enclosed of the NCC computer hardware, available computer software, user support services, and pertinent references. Users are cautioned that the information contained in these discussions is of a summary nature and is not intended to provide reference-level details on the NCC system. Furthermore, as enhancements to the NCC are made, parts of the discussion material in this report may be subject to change. To ensure the accuracy of the descriptions presented here, the user is requested to contact NCC User Services at Research Triangle Park. This is discussed in greater detail in paragraph 6.1.4.

6.1.2 NCC System Hardware Configuration[1]

The National Computer Center data processing hardware consists of memory, processors, mass storage, magnetic tape, unit record equipment, and communications equipment. The base system is the UNIVAC 1110 computer.

Processors, Memory

- Processor Model Number - UNIVAC 1110 3023-99
- Basic 2 x 2 configuration consisting of two Command/Arithmetic Units (CAU) and two Input/Output Access Units (IOAU) each. A single IOAU has 16 I/O channels available.
- Main memory has a capacity of 935,936 36-bit words. This represents 3,743,733 bytes.

Mass Storage

- FH-432 Drum

Number	6
Average Access Time	4.3 milliseconds
Transfer Rate (Maximum)	240,000 words/sec
Capacity (Total)	1.57 million words

- FH-1782 Drum

Number	2
Average Access Time	17 milliseconds
Transfer Rate (Maximum)	240,000 words/sec
Capacity (Total)	4.2 million words

- 8440 Disc (Removable)

Number	32 (4 subsystems)
Average Seek Time	30 milliseconds
Average Access Time (Latency)	12.5 milliseconds
Transfer Rate	138,666 words/sec
Capacity (Total)	640.24 million words (about 232 positions/disc.)

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[1] National Computer Center, "IBM 370 to UNIVAC 1110 Conversion Guide I: General Overview," March 1976.

Mass Storage Space Units

- o 1 Word = 36 bites
  = 6 characters
  = 4 bytes

- o 1 Sector = 28 words = 168 characters
  = 112 bytes

- o 1 Track = 64 sectors = 1,792 words = 10,752 characters
  = 7,168 bytes

- o 1 Position = 64 tracks = 4,096 sectors = 114,688 words =
  688,128 characters
  = 485,752 bytes

- o Random Storage Prepping = 4 sectors = 112 words = 672 characters
  = 448 bytes

Magnetic Tape Units (Uniservo - 16 tape drives)

o Dual Density, 9-track

Number	2
Density	800,1600 bpi
Transfer Rate	96,000-192,000 frames/sec
Speed	305 cm/sec (120 in/sec)

o Multiple Density, 7-track

Number	1
Density	200,556,800 bpi
Transfer Rate	24,000-96,000 frames/sec
Speed	305 cm/sec (120 in/sec)

o 9-track

Number	20
Density	1600 bpi
Transfer Rate	192,000 frames/sec
Speed	305 cm/sec (120 in/sec)

System Control Consoles

- Two consoles, each consisting of one Uniscope 100 CRT display and keyboard with a DCT 500 hardcopy printer.

Communications Equipment

- Two Communications Terminal Module Control (CTMC) units which offer transmission speeds from 300 to 50,000 bits/sec. There are 64 total parts available.

Plotting Equipment

- One CalComp Model 1136 drum plotter with 4,096 words of 9 bit core storage. The plotter is driven by a 1600 pbi, 9-track tape drive. There are three pens per plot head. The plotting speed is 23.4 cm/sec (9.2 in/sec).

Remote Communications Terminals Supported

- Interactive (Demand) Processing

  UNIVAC Uniscope 100 terminal
  UNIVAC DCT-500
  Teletype Models 33, 35, 37, and 38 (KSR/ASR)
  Friden Model 7100
  Anderson-Jacobsen Models 630 and 830
  Tektronix Models 4051 and 4010

- Remote Batch Processing

  UNIVAC U-9200 II RJE terminal
  UNIVAC 1004 RJE terminal and 1004 emulation (e.g., Data 100/78)

6.1.3 Summary of NCC Software Capabilities[1]

The EPA National Computer Center offers a wide selection of business, scientific, special purpose (including utilities), language processors, and miscellaneous software. The following is a brief description of some of the software offered:

Language Processors

- FORTRAN V - The FORTRAN V language has all of the features of the proposed American National Standard (ANSI) FORTRAN IV language and has many extensions which increase the power and flexibility of the language, particularly in the area of data handling.
- ASCII COBOL - The COBOL language available is the American National Standard (ASCII) COBOL. This language is used primarily for business-related applications.
- ASSEMBLER - The 1110 ASSEMBLER language is a powerful user tool designed to facilitate the preparations, editing, and debugging of machine level programs for execution instead of procedure level programs.
- ASCII FORTRAN - This is a new system on the 1110 that offers certain features not available from FORTRAN V. It conforms to the ANSI FORTRAN standard and encompasses revisions to the standard which were expected to be approved during 1975.

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[1] National Computer Center, "IBM 370 to UNIVAC 1110 Conversion Guide I: General Overview," March 1976.

Scientific Software

The following is a brief discussion of a few of the scientific software packages available on the NCC. For a complete list of scientific software available on the UNIVAC 1110 which may or may not be supported by the NCC, please contact NCC User Services (see paragraph 6.1.4).

o	SYMAP	- A graphics system designed for making visual aids for presentations to nontechnical audiences.
o	STAT PAK	- A comprehensive library of 91 fundamental statistical subprograms coded in FORTRAN V, including Chi-square tests, regression analysis, time series analysis, etc.
o	MATH PAK	- A comprehensive library of 84 fundamental mathematical subprograms coded in FORTRAN V, including numerical integration, curve fitting, matrix manipulation, etc.
o	SPSS	- Statistical Package for the Social Sciences, and integrated system of programs for analysis of social science data.
o	FMPS	- Functional Mathematical Programming System, an advanced mathematical programming language, which may be used to solve difficult mathematical problems.
o	TSL	- Time Sharing Library, a series of interactive statistical analysis programs which provide a comprehensive and unified resource for performing many different types of data analysis expeditiously.

- OMNITAB - A highly user-oriented system of programs for simple and complex numerical, statistical, and data analysis. It was developed by the National Bureau of Standards and is intended for a non-programmer audience.
- SAS - Statistical Analysis System, a uniform, simple language in which to state the analysis to be performed.

Business Software

Business software available on the NCC includes the following:

- SORT/MERGE - A file manipulation package available in two versions: a stand-alone parameter driver processor for use with COBOL and a SORT/MERGE subroutine that must be invoked through an assembler language interface.
- PERT - Project Evaluation and Review Technique, a generalized applications program for project/planning and control. The modular design of PERT allows separate processing of the time networks and cost structure while simultaneously providing for time and cost reporting.

Data Base Management Software

- SYSTEM 2000 (S2K) - A generalized data base management system which allows users to define new data bases, modify the definition of existing data bases, retrieve and update values into data bases, and perform data base maintenance functions. The English-like command language of S2K enables the user to perform the above activities in either interactive or batch modes. In addition, the Procedural Language Interface feature permits the user to access a data base through a COBOL or FORTRAN program. S2K is developed by MRI Systems, Inc., Austin, Texas.

Time Sharing Software

o CTS	- Conversational Time Sharing, a subsystem of the UNIVAC 1100 Executive System. CTS provides a conversational time sharing interface to the 1110 computer system for simplified demand processing.

Miscellaneous Software

o SSG	- Symbolic Stream Generator, a processor which produces a stream of data and/or control cards (PROC's).
o SYMSTREAM	- A processor language that is the syntax directed coding that gives directions to SSG.
o CPDMPH	- A utility processor which may be used to dump, punch, and copy tape or mass storage files.
o CalComp Software	- A package of basic plotter subroutines for use with FORTRAN programs. The package includes

PLOT, SYMBOL, WHERE, PLOTS, NUMBER, SCALE, AXIS, FACTOR, NEWPEN, and LINE.

o COPIE	- A file manipulation utility which will accept as input COBOL or FORTRAN created data files residing on tape or mass storage and card files. COPIES produces as output COBOL or FORTRAN compatible data files. COPIE can also be used to convert or create IBM EBCDIC tape files.
o Concatenation Routine	- A utility routine which may be used with ASCII COBOL, FORTRAN, and ASSEMBLER routines to provide for the concatenation of multifile reels and multireel files into a single file.

UNIVAC File Utility Routines (FURPUR)

The FURPUR processor consists of a set of file maintenance routines for manipulation of catalogued or temporary files containing data or program statements. There is a set of control statements recognized by the Executive as calls to FURPUR. Whenever the Executive encounters a FURPUR control statement, the FURPUR processor will be loaded into core. FURPUR continues to process control statements until signaled by the Executive that the next statement is not a FURPUR control statement, at which time FURPUR is terminated. Some of the FURPUR control statements available are:

o @CHG	- Changes element name, version name, read key, write key, and mode of a file.

o @CLOSE	- Writes two hardware EOF (end of file) marks on a magnetic tape and rewinds the tape.
o @COPIN	- Copies elements from an element file located on magnetic tape into a program file on FASTRAND - formatted mass storage.
o @COPOUT	- Copies a program file, or selected elements of a program file, located on FASTRAND - formatted mass storage onto a magnetic tape file in element file format.
o @DELETE	- Drops catalogued files or marks elements in a program file as deleted.
o @FIND	- Locates an element in a magnetic tape file (which must be in element file format) and positions the file before the element's label block.

6.1.4 NCC User Services[1,2]

User Services is part of the Data Systems Division at Research Triangle Park, North Carolina, and was established to provide a central source of information and problem solving support related to NCC UNIVAC 1110 processing. This function consists of assistance in debugging problem runs, passing solutions, etc., on to other users in the user community, as well as assisting the IBM user converting to the UNIVAC system.

User Services may be reached as follows:

U.S. Environmental Protection Agency
Data Systems Division
User Services
MD-34
Research Triangle Park, North Carolina 27711

FTS 629-2804
Commercial 919-549-8411, Extension 2804

In addition to handling problems, User Services also provides an administrative interface user community. Requests for remote batch or demand processing support are directed to User Services. All users of the NCC must be registered for accounting and security purposes. Registration of qualified users will be handled by User Services. The required forms may be obtained from User Services.

1/ National Computer Center, "IBM 370 to UNIVAC 1110 Conversion Guide I: General Overview," March 1976.

2/ NCC USER's REFERENCE MANUAL, U.S. EPA, Data Systems Division, National Computer Center, april 1974 (revised).

6.1.5 Summary of References and Documentation

(1) NCC USER'S REFERENCE MANUAL, U.S. Environmental Protection Agency, Data Systems Division, National Computer Center, Research Triangle Park, North Carolina (April 1974), revised.

(2) UNIVAC 1100 Series FORTRAN V Programmer Reference Manual, Sperry-Univac Computer Systems, UP-4060, Rev. 2 (March 1973).

(3) UNIVAC 1100 Series Operating System Programmer Reference Manual, Sperry-Univac Computer Systems, UP-4144, Rev. 3 (1973).

(4) USER'S MANUAL FOR EPA SCIENTIFIC APPLICATIONS SOFTWARE, Management Information and Data Systems Division, Washington, D.C. (July 1975).

(5) UNIVAC 1100 Series Introduction to Time Sharing for CTS Users, Sperry-Univac Computer Systems, UP-8117 (1975).

(6) UNIVAC 1100 Series American National Standard COBOL (ASCII) Manual, Sperry-Univac Computer Systems, Up-7923, Rev. 1 (1974).

SECTION 6.2

DESCRIPTION OF SYSTEM 2000

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6.2.1 Introduction

The Fine Particle Emissions Information System (FPEIS) data base has been implemented by use of the SYSTEM 2000* data base management system. SYSTEM 2000 has been used extensively to create management and technical information data bases for government and nongovernment users. SYSTEM 2000 was developed by MRI Systems Corporation of Austin, Texas, and was selected as the method of implementation for the FPEIS because of its unique features and flexibility.

Since many users of the FPEIS may not be computer system oriented, the authors felt it advisable to include a brief discussion of SYSTEM 2000 in this report to enable such users to gain a clearer understanding of SYSTEM 2000 and its relevance to any user of the FPEIS. This is needed for several reasons. First of all, the FPEIS is structured in such a way as to maximize the utilization of SYSTEM 2000's unique features. This structure in turn will dictate which data are to be entered, what constitutes a minimum data set, etc. Secondly, the manner in which information is sorted and retrieved also utilizes unique SYSTEM 2000 features. While many users will never request data through direct interaction with the computer, it is important that such users understand why data are arranged in a particular fashion or why data retrieval must meet certain criteria. The key to understanding the FPEIS data base is through an understanding of how SYSTEM 2000 works. Clearly, it is not possible here to present a complete tutorial on SYSTEM 2000. A more detailed discussion of SYSTEM 2000 may be obtained from the extensive documentation available from MRI Systems Corporation, Austin, Texas.

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* SYSTEM 2000 is the registered trademark of MRI Systems Corporation, Austin, Texas.

6.2.2 SYSTEM 2000 Overview[1]

SYSTEM 2000 is a generalized data base management system that operates on IBM 360 and 370 series, UNIVAC 1100 series, and CDC 6000 and CYBER 70 series computers. The Basic SYSTEM 2000, with selected optional features, provides the basis for developing information systems tailored to the requirements of the application and the user. The following is a brief overview of SYSTEM 2000 and its capabilities.

THE USER VIEW

Self-Contained Capabilities

(1) Simplicity--The SYSTEM 2000 self-contained languages are of a form that was devised over many years of use. As an example, several key words have three variations, e.g., HAS, HAVE, and HAVING. Whenever a modification to the SYSTEM 2000 languages are made, care is taken to ensure "grammatical" correctness. In addition to being simple to use and easy to understand, most SYSTEM 2000 commands have abbreviations. This simplicity was also extended to data; that is, a user may specify a component's name or numeric identifier whenever the component is used in a command. For example, C100 or SOURCE CATEGORY. Taken together, the command language and the data components can in most cases self-document the query. For example:

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[1] Gorman, M. M., and E. A. Wallish, "SYSTEM 2000 Capabilities," MRI Systems Corporation (1974).

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PRINT SOURCE CATEGORY, SOURCE NAME   WHERE   STATE
G EQ KS:
  or
PR C100, C100 WH C170 EQ KS:
```

(2) Data Independence--One of the cardinal principles that permeates SYSTEM 2000 is that the user's logical view of the data structure is free from the restrictive conventions of data processing hardware. Thus a user perceives only a natural hierarchical or linear view of his data organization. The computer, however, has its own view of the data; thus single values, multiple values, or global values can be changed, added, deleted, or retrieved without the user being aware of processes involved. In addition to a single user view of the data structure, passwords may be employed to present a subset of the structure, or the appearance of an entirely different structure.

(3) Multi-Record, Multi-File Capabilities--SYSTEM 2000's qualification clause in the Queue or Immediate languages allows for complex data selection for either retrieval or change. SYSTEM 2000 also allows definitions of multi-record structures which may be linked by a single higher key element for network type retrievals.

(4) Interactive--SYSTEM 2000 is designed as an interactive system. In its original conception--some 20 years ago--there was provided a well engineered foundation on which all its features are now built. The user may envoke a command echo function which echos for the user all commands that were

received. There is a large variety of diagnostic messages, and because of the basic design of the system, all commands received the most immediate response possible.

(5) Batch--SYSTEM 2000 has multiple methods for data base interrogation. All of these query languages may be transmitted to the computer in either the batch mode or the interactive mode.

(6) Maintenance and Query Data Editing--SYSTEM 2000 supports three types of data editing. The first is automatic and consists of data type checking and rudimentary field size checking. The second type is user coded and is supported by the advanced TP monitor. The third type is "hindsight" checking. That is, a user is easily able to check for illegal data values, ranges, etc., with SYSTEM 2000 natural language commands once the data are loaded.

(7) Arithmetic--SYSTEM 2000 is able to perform arithmetic computation on data that has been selected for either retrieval or for storage back into the data base. SYSTEM 2000 is also able to "hold" the results of data searches for use in another query. The conditional clauses can contain Boolean operators, relational operators (GE, LT, etc.), range searches, and nested conditions.

(8) Report Formatting Report--First, there exists in the Immediate language the ability to place multiple retrieval commands in an invokable Macro. These stored commands can cause the production of headers, trailers, report dates, sorted columnar data with titles, subtotals, and totals. The

arithmetic functions include COUNT, SUM, MIN, MAX, AVG, and SIGMA. A second method is through a fully developed Report Writer.

(9) Linkage to Procedural Capabilities--SYSTEM 2000's advanced TP Monitor is able to direct a transaction to SYSTEM 2000, a procedural program, or to a procedural program which utilizes SYSTEM 2000 for data selection and retrieval. Within the procedural languages, simple English-like statements provide for security, data base management, data selection for retrieval or maintenance, audit trail creation, and damaged data base recovery. These procedural capabilities are currently available in FORTRAN, COBOL, and assembly languages.

(10) Mixed Views of Data--SYSTEM 2000 offers simple to use methods of "creating" different views of a data structure. This is accomplished through the use of passwords. SYSTEM 2000's passwords are independent of each other; thus, each password is able to have described to it a logical subset of the hierarchical structure. For each such logical subset description the user may have retrieval, update, and qualification authorities for any or all of the elements. Through the English-like password definition language, these subsets can be dynamically created or discarded. A SYSTEM 2000 data structure may be designed to contain one entry type or multiple entry types. The password definition language may be used to shield one entry type's description from the other.

(11) Schema Modification--SYSTEM 2000 allows the user to change the data base definition. The changes may be administrative in nature, i.e., password redefinition, component name changing, component number changing, and data type redesignation. The changes may also be structural, i.e., adding to the definition of a new element, deleting an element's definition, adding a repeating group, etc. For some classes of changes, the modification requires no change to existing stored data, and for others, the user is not aware of the required stored data changes. All structure modification is password controlled.

(12) Input Record Definition--SYSTEM 2000 utilizes the entry as the load vehicle. An entry is a collection of related data sets and a data set is the value occurrence for a particular element set. Because the entry is variable in length--in terms of the quantity of data sets loaded--the formats for load transactions are user definable. The definition process may be "real-time," a stored macro, or a formatted screen through a CRT input. For complex entry creation, a procedural language program can be written that selects, edits, and merges data from a single or multiple automated files. These programs may be invoked in a batch or TP environment depending upon the TP employed.

(13) Geographical Facilities--SYSTEM 2000 currently does not contain the automatic facilities for standard geographic coordinates. SYSTEM 2000 does, however, contain all the processing features that would enable this feature to be implemented easily. For example, data values are currently

translated to a computable format. SYSTEM 2000 also contains a range determination condition. An example, therefore, of how the geographic coordinate system grammar would appear would be: PRINT COUNT SITE NAME WHERE UTM-X SPANS < UTM-X min > * < UTM-X max > AND UTM-Y SPANS < UTM-Y min > * < UTM-Y max > :.

(14) Extracting--SYSTEM 2000 has the capability of "dumping" whole entries, part of entries, or computational results. These data may be then used for input to another data base, for qualification data in subsequent queries, and for use in other non-SYSTEM 2000 processing programs.

Procedural Capabilities

(1) New or Extensions of Existing Languages--MRI Systems Corporation feels that existing procedural oriented languages (POL), i.e., COBOL or FORTRAN, are so widely accepted that to develop an additional procedural-oriented language would be counter-productive to a policy of standardization. MRI, therefore, brought to these languages--in simple English-like phrases--many of the natural language data selection and retrieval commands, many of the data base maintenance and control commands, the data base audit trail retention and data base recovery commands, etc. The results achieved are procedural programs that have their data base management commands written in a language that is machine independent.

(2) Self-Contained Facilities in Procedural Languages--Many of the SYSTEM 2000 data base control statements are "1 for 1" available in the procedural oriented language. Much of the WHERE clause logic is also available in the procedural oriented languages available in the POL. The data selection logic is different in form, but very similar in logic to that of the SYSTEM 2000 natural languages. Therefore, since the concepts are similar, the "retaining" necessary is minimal. Once learned, users state that their POL programs are easier to design, program, debug, and maintain.

(3) Nature of the Language Extension--MRI, in keeping with its principle of increasing user throughput, has designed its POL extensions to be simple English-like statements. For example? LOCATE MANUFACTURER WHERE GENERIC DEVICE TYPE EQ ESP. The results of this command would be an array of pointers to those data sets containing qualified manufacturers. MRI in keeping also with its principle of increasing computer throughput, contains a precompiler which translates these English-like statements into "hard" calls to subroutines. The user, therefore, has both the simplicity of command definition and the swiftness of command execution.

(4) Data Independence--SYSTEM 2000 POL extensions are such that changes to the data structure definition do not impact the POL program--providing of course that the data elements to be retrieved have not been removed. The user, therefore, has a high degree of independence from structure modification.

PERFORMANCE

Interactive Mode

(1) Response Time--While response performance is certainly a function of particular fields queried by the user, the nature of the query (e.g., multi-entry or single entry conditioning), and the number of users, number of entries retrieved or updated, and data base parameters (entry length, data base organization, etc.), SYSTEM 2000's storage structure, query processor, buffer management routines, easily enable the average response time to be less than 10 sec.

(2) Storage Requirements

Disk--SYSTEM 2000 data bases are able to process from either tape or mass storage requirements, that is, there is a Sequential File Processing feature (tape) and a standard processing capability (disk). The storage structure for SYSTEM 2000 data on disk is very sophisticated as the system was designed to be interactive.

Core--SYSTEM 2000 currently occupies 25 to 30K words on CDC and UNIVAC computers, and 120 to 300K bytes on IBM computers. The size of core available directly affects processing speeds.

(3) Degradation and Recovery--SYSTEM 2000 has very sophisticated capabilities for garbage collecting and reuse. In addition, there exists capabilities to reorganize--on a selective basis--the tables that comprise a SYSTEM 2000 data base. Index table reorganization tends to greatly enhance the query throughput.

Batch Mode

Processing in batch is similar to the response above with the following exception. SYSTEM 2000 has Queue Mode processing. That is, a selection of natural language commands and the commands in a POL program are able to be "batch" processed. Basically, all the queued commands are analyzed to determine the largest single subset of data that is needed to satisfy the "action-clause" part of a query command. The action-clauses are then serially processed against the subset.

Procedural Capabilities

All SYSTEM 2000 POL commands are compilable into "hard" code. This means that SYSTEM 2000 POL commands are executed directly rather than interpreted then executed. Savings are therefore significant.

NETWORK CAPABILITIES

While the SYSTEM 2000 data structure is hierarchical in nature, certain network structures can be achieved through the natural languages, through LINK commands, and through the establishment of higher level elements which contain network relationship values.

SECURITY

SYSTEM 2000 offers very comprehensive security capabilities. In general, security is divided into system use protection, entry use protection, and element use protection. System use protection in SYSTEM 2000 is either a function of its advanced TP monitor or the TP monitor under which SYSTEM 2000 is functioning. Under the SYSTEM 2000 TP monitor, there exists positive terminal ID security, user security, and transaction security.

Data base use protection in SYSTEM 2000 is achieved through a password. If the user has the correct password for the correct data base, access to the data base is granted.

Entry use protection in SYSTEM 2000 is achieved through an element that has been declared as the entry key and that has a unique value for each entry.

Element use security is achieved in SYSTEM 2000 through a password. For each password, explicit permissions must be given for each element over which the password is to have control. The permissions allow data retrieval, data updating, data element use in a qualification clause for a retrieval action, and data element use in a qualification clause for an update action. Of singular importance in any secure system is the ability to dynamically change all security permissions.

DATA AND PROGRAM RELIABILITY

(1) Recovery and Back-Up Procedures--SYSTEM 2000 provides an efficient and easy to use mechanism for data base recovery from systems failures with an acceptable level of data loss. This process involves the periodic dumping of complete data bases onto off-line storage and the continual recording of parsed update transactions as they occur from any update source in order to repeat all or selectively those update operations which are not reflected on a back-up copy.

(2) Access Controls and Data Integrity--SYSTEM 2000 has controls which protect the data base from unrecognized damage. At the beginning of every update, the data base is flagged "damaged" and only after every data change has been written back onto the disk is the flag turned off. SYSTEM 2000 also traps all POL program errors to assure proper data base close outs before returning to the host computer's operating system.

The security as described above provides supplemental control for file protection.

Finally, file protection is additionally achieved through file lock-out at the moment data or indices are about to be changed. This means that the lock-out is achieved on a command by command basis rather than the 'update-job' basis.

6.2.3 SYSTEM 2000 References and Documentation

(1) SYSTEM 2000 REFERENCE MANUAL, MRI Systems Corporation, Austin, Texas (1974).

(2) SYSTEM 2000 PROCEDURAL LANGAUGE FEATURE - FORTRAN, MRI Systems Corporation, Austin, Texas (July 1973).

SECTION 6.3

STANDARD DATA INPUT FORMS

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6.3.1 Introduction

Standard data input forms for the FPEIS may be found following this discussion. There are six forms in all. These forms may be reproduced for use in encoding emissions testing data. Specific encoding instructions are given in Section 2.

Form I 12/76

Form Completed by

STATIONARY POINT SOURCE
FINE PARTICULATE EMISSIONS INFORMATION SYSTEM
DATA INPUT FORMS

A - SOURCE DESCRIPTION

Test Series No.	Sub Series No.	Run No.	Card No.		SCC I (Source Category)	SCC II (Type of Operation)	SCC III (Feed Material Class)	Test Series Start Date Mo	Da	Yr	Finish Date Mo	Da	Yr	UTM Zone
1 2 3 4 5	6 7 8	9 10	11 12 13	14 15	16–32	33–49	50–66	67 68	69 70	71 72	73 74	75 76	77 78	79 80
			A 0 1											

Card No.		SCC IV (Operating Mode Class)	Site Name	
11 12 13	14 15	16–35	36–75	76–80
A 0 2				

Card No.		Source Name	Street	City	State
11 12 13	14 15	16–40	41–60	61–78	79 80
A 0 3					

Card No.		Zip	UTM Coords X	UTM Coords Y		Tested By
11 12 13	14 15	16–20	21–24	25–29	30	31–80
A 0 4						

Card No.		Reference	
11 12 13	14 15	16–75	76–80
A 0 5			

B - TEST SERIES REMARKS

Test Series No.	Sub Series No.	Run No.	Card No.		Remarks in Text
1 2 3 4 5	6 7 8	9 10	11 12 13	14 15	16–80
			B 0 1		
			B 0 2		
			B 0 3		
			B 0 4		
			B 0 5		
			B 0 6		
			B 0 7		
			B 0 8		
			B 0 9		
			B 1 0		

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STATIONARY POINT SOURCE
FINE PARTICULATE EMISSIONS INFORMATION SYSTEM
DATA INPUT FORMS

Form 2 12/76

Form Completed by

C - CONTROL DEVICE(S) CHARACTERISTICS

Test Series No.	Sub Series No.	Run No.	Card No.		Device No. (1,2 or 3)	Device Category	Device Class	Generic Type
1 2 3 4 5	6 7 8	9 10	11 12 13	14	15	16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48	49 50 51 52 53 54 55 56 57 58 59 60	61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80
			C 0 1					

Card No.			Commercial Name	Manufacturer	
11 12 13	14	15	16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45	46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75	76 77 78 79 80
C 0 2					

Card No.			Device Description	
11 12 13	14	15	16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75	76 77 78 79 80
C 0 3				

Card No.			Device Description (continued)	
11 12 13	14	15	16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75	76 77 78 79 80
C 0 4				

CONTROL DEVICE(S) DESIGN PARAMETERS

Test Series No.	Sub Series No.	Run No.	Card No.		Device No. (1,2 or 3)	Serial No.	Specifications	Value	
1 2 3 4 5	6 7 8	9 10	11 12 13	14	15	16 17	18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47	48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67	68 69 70 71 72 73 74 75 76 77 78 79 80
			C 0 5						
			C 0 5						
			C 0 5						
			C 0 5						
			C 0 5						
			C 0 5						
			C 0 5						
			C 0 5						
			C 0 5						
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			C 0 5						
			C 0 5						
			C 0 5						

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FINE PARTICULATE EMISSIONS INFORMATION SYSTEM
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D - TEST CHARACTERISTICS

Test Series No.	Sub Series No.	Run No.	Card No.		Control Device Inlet or Outlet (I or Ø)	Test Sub Series Date Mo	Da	Yr	Start Time	Stop Time	Source Operating Mode*	Source Operating Rate*	% Design Capacity*
1 2 3 4 5	6 7 8	9 10	11 12 13	14	15	16 17	18 19	20 21	22 23 24 25	26 27 28 29	30–59	60–76	77 78 79 80
			D 0 1										

Card No.			Feed Material*	Feed Material Composition*
11 12 13	14	15	16–45	46–80
D 0 2				

Card No.			Sampling Location Description*	Volume Flow Rate*	Velocity*	Temp.*	Pres.*	% H2O*	% Iso Kinetic*
11 12 13	14	15	16–55	56–61	62–65	66–69	70–74	75–77	78–80
D 0 3									

Card No.			CO_2*	CO*	O_2*	N_2*	Trace Gases in ppm (Text)*
11 12 13	14	15	16–18	19–22	23–27	28–31	32–80
D 0 4							

CONTROL DEVICE(S) OPERATING PARAMETERS

Test Series No.	Sub Series No.	Run No.	Card No.		Device No. (1,2 or 3)	Serial No.	Specification*	Value*	
1 2 3 4 5	6 7 8	9 10	11 12 13	14	15	16 17	18–47	48–67	68–80
			D 0 5						
			D 0 5						
			D 0 5						
			D 0 5						
			D 0 5						
			D 0 5						
			D 0 5						
			D 0 5						
			D 0 5						
			D 0 5						
			D 0 5						
			D 0 5						
			D 0 5						
			D 0 5						
			D 0 5						
			D 0 5						
			D 0 5						
			D 0 5						
			D 0 5						
			D 0 5						

* Need not be filled if the preceding subseries contains the same data.

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CONTROL DEVICE(S) OPERATING PARAMETERS (cont'd)

Test Series No.	Sub Series No.	Run No.	Card No.			Serial No.	Device No. (1,2 or 3) Specification *	Value *	
1 2 3 4 5	6 7 8	9 10	11 12 13	14	15	16 17	18–47	48–67	68–80
			D 0 5						
			D 0 5						
			D 0 5						
			D 0 5						
			D 0 5						
			D 0 5						
			D 0 5						
			D 0 5						
			D 0 5						
			D 0 5						

SUBSERIES REMARKS

Test Series No.	Sub Series No.	Run No.	Card No.			Remarks in Text*
1 2 3 4 5	6 7 8	9 10	11 12 13	14	15	16–80
			D 0 6			
			D 0 7			
			D 0 8			
			D 0 9			
			D 1 0			
			D 1 1			
			D 1 2			
			D 1 3			
			D 1 4			
			D 1 5			
			D 1 6			
			D 1 7			
			D 1 8			
			D 1 9			
			D 2 0			

E – PARTICULATE MASS TRAIN RESULTS

Test Series No.	Sub Series No.	Run No.	Card No.			Front Half	Total	Mass Train Comments (Text)
1 2 3 4 5	6 7 8	9 10	11 12 13	14	15	16–25	26–35	36–80
			E 0 1			• E +	• E +	

F – PARTICULATE PHYSICAL PROPERTIES

Test Series No.	Sub Series No.	Run No.	Card No.			Density*	Determination Resistivity*			Other Physical Properties in Text
1 2 3 4 5	6 7 8	9 10	11 12 13	14	15	16–20	21–27	28	29 30	31–80
			F 0 1				• +			

* Need not be filled if the preceding subseries contains the same data.

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G - PARTICULATE BIOASSAY DATA

Test Series No. 1–5	Sub Series No. 6–8	Run No. 9–10	Card No. 11–13	14–15	Bioassay Test Type 16–35	Bioassay Comments 36–80
			G 0 1			
			G 0 1			
			G 0 1			
			G 0 1			
			G 0 1			

H - CHEMICAL COMPOSITION

Aerodynamic/Stokes Diameter (1 or 0)

Calib or Calc (1 or 0)

Particle Boundary Diameter*

Test Series No. 1–5	Sub Series No. 6–8	Run No. 9–10	Card No. 11–13	14–15	16–18	19	20	Upper Boundary Diameter 21–27	① 28–32	② 33–38	③ 39–44	④ 45–50	⑤ 51–56	⑥ 57–62	⑦ 63–68	⑧ 69–74	⑨ 75–80
			H 0 1					.	.	.	.	.	.	.	.	.	.

Analysis I.D.

Chemical Concentration (µg/m³)

Card No. 11–13	14–15	Chemical I.D. 16–19	20	Mass Train Filter or Pooled Stages 21–26	① ± 27–32	② ± 33–38	③ ± 39–44	④ ± 45–50	⑤ ± 51–56	⑥ ± 57–62	⑦ ± 63–68	⑧ ± 69–74	⑨ ± 75–80
H 0 2				.	.	.	.	.	.	.	.	.	.
H 0 2				.	.	.	.	.	.	.	.	.	.
H 0 2				.	.	.	.	.	.	.	.	.	.
H 0 2				.	.	.	.	.	.	.	.	.	.
H 0 2				.	.	.	.	.	.	.	.	.	.
H 0 2				.	.	.	.	.	.	.	.	.	.
H 0 2				.	.	.	.	.	.	.	.	.	.
H 0 2				.	.	.	.	.	.	.	.	.	.
H 0 2				.	.	.	.	.	.	.	.	.	.
H 0 2				.	.	.	.	.	.	.	.	.	.
H 0 2				.	.	.	.	.	.	.	.	.	.
H 0 2				.	.	.	.	.	.	.	.	.	.
H 0 2				.	.	.	.	.	.	.	.	.	.
H 0 2				.	.	.	.	.	.	.	.	.	.
H 0 2				.	.	.	.	.	.	.	.	.	.
H 0 2				.	.	.	.	.	.	.	.	.	.
H 0 2				.	.	.	.	.	.	.	.	.	.
H 0 2				.	.	.	.	.	.	.	.	.	.
H 0 2				.	.	.	.	.	.	.	.	.	.
H 0 2				.	.	.	.	.	.	.	.	.	.
H 0 2				.	.	.	.	.	.	.	.	.	.
H 0 2				.	.	.	.	.	.	.	.	.	.
H 0 2				.	.	.	.	.	.	.	.	.	.
H 0 2				.	.	.	.	.	.	.	.	.	.
H 0 2				.	.	.	.	.	.	.	.	.	.

* Need not be filled if the preceding subseries contains the same data.

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FINE PARTICULATE EMISSIONS INFORMATION SYSTEM
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Form Completed by

I - MEASUREMENT PARTICULARS

Test Series No.	Sub Series No.	Run No.	Card No.	Measurement Instrument/Method No.	Measurement Instrument/Method Name**	Meas. Start Time	Sampling Period**	Aerosol Flow Rate**	Gas Conditions at Measurement Location** Temp.	Press.	% H_2O		Dilution Factor**
1–5	6–8	9–10	11–13	14–15	16–45	46–49	50–54	55–60	61–64	65–69	70–72	73–75	76–80
			I 0 1										

Card No.		Measurement Size Range** Lower	Upper	Collection Surface/Substrate and its Specifications**
11–13	14–15	16–20	21–25	26–80
I 0 2				

Card No.		Comments on the Measurement**
11–13	14–15	16–80
I 0 3		
I 0 4		
I 0 5		

J - PARTICULATE SIZE DISTRIBUTION DATA

Test Series No.	Sub Series No.	Run No.	Card No.	Measurement Instrument/Method No.	Aerodynamic/Stokes Diameter (1 or 0)	Particle Size Data**	Calib or Calc (1 or 0)
1–5	6–8	9–10	11–13	14	15	16–79	80
			J 0 1				
			J 0 2				
			J 0 3				

Card No.	Measurement Instrument/Method No.	Mass/No. (1 or 0)	Mass/Number Data
11–13	14	15	16–80
J 0 4			± ± ± ± ± ± ± ±
J 0 5			
J 0 6			

** Need not be filled if the preceding subseries or run with this instrument/method contains the same data.

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SECTION 6.4

FPEIS STANDARD REPORT OUTPUT

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```
                                 FINE PARTICULATE EMISSIONS INFORMATION SYSTEM
                                             FPEIS SUMMARY REPORT
                                 ---------------------------------------------

TEST SERIES NO:   41   TEST SERIES AT SITE FROM 06/21/73 TO 06/21/73    BY: JACKO.R.B. ET AL.. PURDUE UNIVERSITY
                       REFERENCE: YOST. K.J. ET AL.. PROGRESS REPORT NSF(RANN) GI-35106

 SOURCE CHARACTERISTICS--------------------------

        NEDS SCC CATEGORY:            INDUSTRIAL PROCES           SITE NAME     NEW JERSEY ZINC CO.
                 OPERATION CLASS:     PRIMARY METALS              SOURCE NAME   COKER NO.6
                 FEED MATERIAL CLASS: ZINC SMELTING               ADDRESS
                 OPERATION MODE CLASS: COKING                                   PALMERTON          PA
                                                                  UTM ZONE AND X-Y COORDS: 18     -0.0    -0.0

CONTROL DEVICE(S) CHARACTERISTICS----------------

                          UNCONTROLLED SOURCE

TEST SERIES REMARKS-------------------------------
TEST SERIES NO:    43    SUBSERIES NO:  1          INLET                          TEST DATE: 06/21/73  FROM 13:00 TO 15:00 HOUR

TEST CHARACTERISTICS---------------------------------

        SOURCE OPERATING MODE:  COKING                            SOURCE OPERATING RATE:  4680 KG/HR        PCT DESIGN CAPACITY: 80.
        FEED MATERIAL:                                           FEED MATERIAL COMPOSITION:

        CONTROL DEVICE INLET          SAMPLING POINT DESCRIPTION: 12 DIA DNSTREAM FLOW DISTURBANCE          % ISOKINETIC: 100

        PROCESS CONDITIONS:   VOL FLOW=     3.3 DNM3/S  VELOCITY=   8.4 M/S  T=  900 C   P=   760 MMHG   WATER VAP %VOL= 11.3

        GAS COMPOSITION:      ORSAT-           CO2=  7.30 %   CO=  0.00 %   O2= 11.20 %   N2= 81.50 %
                              TRACE GASSES(PPM)-

CONTROL DEVICE(S) OPERATING PARAMETERS ------------

PARTICULATE MASSTRAIN RESULTS -----------------

        FRONT HALF= 2.330E+06 UG/DNM3   TOTAL=-0.          COMMENTS: EPA METHOD 5

PARTICULATE PHYSICAL PROPERTIES -------------------

        DENSITY= 1.00 GM/CC ASSUMED  RESISTIVITY= 1.50E+11 OHM-CM ASSUMED


CHEMICAL COMPOSITION DATA--------------------------

        PARTICULATE SAMPLER UNCALIBRATED

                                                                  SAMPLER STAGE CUT POINTS (UM)
                                                                  -----------------------------
                                          0        1        2        3        4        5        6        7        8        9
                                       ------   ------   ------   ------   ------   ------   ------   ------   ------   ------
                                         30.     24.2     15.1     10.      7.       4.6      2.4      1.4       .9

                                                                  CHEMICAL  CONCENTRATION IN  (UM/DNM3)
        CHEMICAL NAME                   MAS TRN   STAGE    STAGE    STAGE    STAGE    STAGE    STAGE    STAGE    STAGE    STAGE
           ANALYSIS METHOD             /POOLD      1        2        3        4        5        6        7        8        9
        ---------------------------    ------   ------   ------   ------   ------   ------   ------   ------   ------   ------

         1) CADMIUM                              1.5 +3   4.14+2   1.84+3   1.32+3   1.02+3   1.63+3   6.06+3   1.45+4
              ATOMIC ABSORPTION
         2) LEAD                                 0.       0.       1.36+3   9.67+2   5.76+2   8.20+2   2.63+3   5.57+3
              ATOMIC ABSORPTION
         3) ZINC                                 4.62+3   1.20+3   7.33+3   6.11+3   4.16+3   9.13+3   3.10+4   6.58+4
              ATOMIC ABSORPTION
         4) COPPER                               4.08+1   0.       4.08+1   3.26+1   0.       0.       4.89+1   7.69+1
              ATOMIC ABSORPTION

SUBSERIES REMARKS------------------------------------
```

TEST SERIES NO: 43 SUBSERIES NO: 1 RUN NO: 1 CONTROL DEVICE INLET

MEASUREMENT PARTICULARS------------------------------

MEAS. INST/METHOD: 1 ANDERSEN MODEL III (UNCALIBRATED) SIZE RANGE: .900 TO 30.000 UM
COLLECTION SURFACE/SUBSTRATE: GLASS FIBER
MEAS. START TIME: 1340 SAMPLING PERIOD: 2.0 MIN SAMPLING RATE: 18.40 LPM DILUTION FACTOR: 1.0

GAS SAMPLING CONDITIONS: TEMP= 400 C PRESSURE= 760 MMHG WATER VAP %VOL = 11.3

COMMENTS ON THE MEASUREMENT:

PARTICLE SIZE DISTRIBUTION DATA

PARTICLE DENSITY= 1.00 GM/CC

AERODYNAMIC DIA (UM)		PARTICLE DIA (UM)		DM (UG/DNM3)	DM/DLDAE (UG/DNM3)	DS (UM2/CC)	DS/DLDAE (UM2/CC)	DN (NO./CC)	DN/DLDAE (NO./CC)	CUM M (%)
BNDRY	MID PT	BNDRY	MID PT							
30.000		30.000								
24.200	26.944	24.200	26.944	3.800E+04	4.073E+05	8.462E+03	9.069E+04	3.710E+00	3.976E+01	
15.100	19.116	15.100	19.116	2.990E+04	1.460E+05	9.385E+03	4.582E+04	8.175E+00	3.991E+01	
10.000	12.288	10.000	12.288	3.260E+04	1.821E+05	1.542E+04	8.894E+04	3.355E+01	1.875E+02	
7.000	8.367	7.000	8.367	2.450E+04	1.582E+05	1.757E+04	1.134E+05	7.989E+01	5.158E+02	
4.600	5.675	4.600	5.675	2.170E+04	1.140E+05	2.294E+04	1.258E+05	2.268E+02	1.244E+03	
2.400	3.323	2.400	3.323	3.530E+04	1.249E+05	6.374E+04	2.256E+05	1.838E+03	6.505E+03	
1.400	1.833	1.400	1.833	7.340E+04	3.136E+05	2.403E+05	1.026E+06	2.276E+04	9.723E+04	
.900	1.122	.900	1.122	1.580E+05	8.234E+05	8.445E+05	4.401E+06	2.134E+05	1.112E+06	

TOTAL MASS CONC= 4.134E+05 TOTAL SURF CONC= 1.223E+06 TOTAL NUM CONC= 2.383E+05

SECTION 6.5

FPEIS DATA BASE STRUCTURE

CONTENTS

Number Item Page

6.5.1 Introduction. UG-6.5.1-1

6.5.2 SYSTEM 2000 Data Base Definition. UG-6.5.2-1

20p

6.5.1 Introduction

Direct access to the FPEIS requires that the user have a working knowledge of the SYSTEM 2000 Data Base Management System. The key to the sorting and retrieval of data is the data base definition. This is a list of all of the data elements which are identified by unique component numbers and which are arranged in a hierarchical structure. Section 6.5.2, which follows, gives the SYSTEM 2000 data base definition for the FPEIS.

6.5.2 SYSTEM 2000 Data Base Structure

```
10*  FPEIS (name X (5))

50*  Category (RG)

     100*  Source category (name X (17) in 50)

     110*  Source characteristics (RG in 50)

           120*  Type of operation (name X (17) in 110)

           130*  Feed material class (name X (17) in 110)

           140*  Operating mode class (name X (20) in 110)

           150*  Source name (name X (25) in 110)

           160*  Site name (name X (40) in 110)

           170*  Zone location (number 99 in 110)

           180*  UTM-X (decimal number 999.9 in 110)

           190*  UTM-Y (decimal number 9999.9 in 110)

           200*  Address (nonkey name X (20) in 110)

           210*  City (name X (18) in 110)

           220*  State (name XX in 110)

           230*  Zip code (nonkey integer number 9(5) in 110)

           300*  Test series (RG in 110)

                 310*  Test series number (integer number 9(5) in 300)

                 320*  Test series reference (name X (60) in 300)

                 330*  Name of testing group (name X (50) in 300)

                 340*  Series start date (nonkey date in 300)

                 350*  Series finish date (nonkey date in 300)

                 355*  Date FPEIS entry (date in 300)
```

    360* Test series remark 1 (nonkey text X (65) in 300)
    361* Test series remark 2 (nonkey text X (65) in 300)
    362* Test series remark 3 (nonkey text X (65) in 300)
    363* Test series remark 4 (nonkey text X (65) in 300)
    364* Test series remark 5 (nonkey text X (65) in 300)
    365* Test series remark 6 (nonkey text X (65) in 300)
    366* Test series remark 7 (nonkey text X (65) in 300)
    367* Test series remark 8 (nonkey text X (65) in 300)
    368* Test series remark 9 (nonkey text X (65) in 300)
    369* Test series remark 10 (nonkey text X (65) in 300)
400* Control devices (RG in 300)
    410* Generic device type (name X (20) in 400)
    420* Device class (name X (12) in 400)
    430* Device category (nonkey text X (33) in 400)
    440* Device commercial name (name X (30) in 400)
    450* Manufacturer (name X (30) in 400)
    460* Device description 1 (nonkey text X (60) in 400)
    461* Device description 2 (nonkey text X (60) in 400)
500* Design specification (RG in 400)
    510* Device number (integer number 9 in 500)
    520* Specification number 2 (integer number 99 in 500)
    530* Specification type (nonkey name X (30) in 500)
    540* Specification value (nonkey name X (20) in 500)
600* Test characteristics (RG in 300)
    610* Subseries number (integer number 999 in 600)

620* Subseries test date (nonkey date in 600)

630* Subseries start time (nonkey integer number 9(4) in 600)

640* Subseries finish time (nonkey integer number 9(4) in 600)

650* Sampling location (name X in 600)

660* Sampling location description (name X (40) in 600

670* Source operating mode (nonkey text X (30) in 600)

680* Source operating rate (nonkey text X (17) in 600)

690* Percent design capacity (nonkey text X (17) in 600)

700* Source feed material (nonkey text X (30) in 600)

710* Feed material composition (nonkey text X (35) in 600)

720* Volumetric flow rate (nonkey decimal number 9(5).9 in 600)

730* Gas velocity sampling location (nonkey decimal number 999.9 in 600)

740* Gas temperature sampling location (nonkey integer number 9999 in 600)

750* Pressure sampling location (nonkey integer number 9(5) in 600)

760* Moisture content (nonkey decimal number 99.9 in 600)

770* Percent isokinetic sampling (nonkey integer number 999 in 600)

780* CO-2 (decimal number 99.99 in 600)

781* CO (decimal number 99.99 in 600)

782* O-2 (decimal number 99.99 in 600)

783* N-2 (decimal number 99.99 in 600)

790* Trace gases in PPM (nonkey text X (49) in 600)

800* Mass train - total mass concentration mantissa (nonkey decimal number 99.999 in 600)

810* Mass train - total mass concentration exponent (nonkey integer number 99 in 600)

820* Mass train - front half mass concentration mantissa (nonkey decimal number 99.999 in 600)

830* Mass train - front half mass concentration exponent (nonkey integer number 99 in 600)

840* Mass train comments (nonkey text X (45) in 600)

850* Density (nonkey decimal number 99.99 in 600)

860* Density determination (nonkey text X in 600)

870* Resistivity-mantissa (nonkey decimal number 9.99 in 600)

880* Resistivity-exponent (nonkey integer number 99 in 600)

890* Resistivity determination (nonkey text X in 600)

900* Physical properties comments (nonkey text X (50) in 600)

910* Subseries remark-1 (nonkey text X (65) in 600)

911* Subseries remark-2(nonkey text X (65) in 600)

912* Subseries remark-3 (nonkey text X (65) in 600)

913* Subseries remark-4 (nonkey text X (65) in 600)

914* Subseries remark-5 (nonkey text X (65) in 600)

915* Subseries remark-6 (nonkey text X (65) in 600)

916* Subseries remark-7 (nonkey text X (65) in 600)

917* Subseries remark-8 (nonkey text X (65) in 600)

918* Subseries remark-9 (nonkey text X (65) in 600)

919* Subseries remark-10 (nonkey text X (65) in 600)

920* Subseries remark-11 (nonkey text X (65) in 600)

921* Subseries remark-12 (nonkey text X (65) in 600)

922* Subseries remark-13 (nonkey text X (65) in 600)

923* Subseries remark-14 (nonkey text X (65) in 600)

924* Subseries remark-15 (nonkey text X (65) in 600)

1000* Control device operating parameters (RG in 600)

1010* Control Device number (integer number 9 in 1000)

1020* Parameter number 2 (integer number 99 in 1000)

1030* Parameter type (nonkey name X (50) in 1000)

1040* Parameter value (nonkey name X (20) in 1000)

1100* Bioassay analysis (RG in 600)

1110* Bioassay test type (name X (20) in 1100)

1120* Bioassay test remarks (nonkey name X (45) in 1100)

1200* Chemical calibration/calculation (integer number 9 in 600)

1205* Diameter basis (integer number 9 in 600)

1210* Upper boundary limit (nonkey decimal number 99.999 in 600)

1220* Stage-1 limit (nonkey decimal number 99.999 in 600)

1230* Stage-2 limit (nonkey decimal number 99.999 in 600)

1240* Stage-3 limit (nonkey decimal number 99.999 in 600)

1250* Stage-4 limit (nonkey decimal number 99.999 in 600)

1260* Stage-5 limit (nonkey decimal number 99.999 in 600)

1270* Stage-6 limit (nonkey decimal number 99.999 in 600)

1280* Stage-7 limit (nonkey decimal number 99.999 in 600)

1290* Stage-8 limit (nonkey decimal number 99.999 in 600)

1300* Stage-9 limit (nonkey decimal number 99.999 in 600)

1400* Chemical analysis (RG in 600)

1410* SAROAD chemical ID (integer number 9999 in 1400)

1420* Analysis method (name X in 1400)

1430* Filter/total (nonkey text X (6) in 1400)

1432* Stage-1 (nonkey text X (6) in 1400)

1434* Stage-2 (nonkey text X (6) in 1400)

1436* Stage-3 (nonkey text X (6) in 1400)

1438* Stage-4 (nonkey text X (6) in 1400)

1440* Stage-5 (nonkey text X (6) in 1400)

1442* Stage-6 (nonkey text X (6) in 1400)

1444* Stage-7 (nonkey text X (6) in 1400)

1446* Stage-8 (nonkey text X (6) in 1400)

1448* Stage-9 (nonkey text X (6) in 1400)

1500* Run group (RG in 600)

1505* Run number (integer number 99 in 1500)

1510* Measurement instrument/method number (integer number 9 in 1500)

1520* Measurement instrument/method name (name X (30) in 1500)

1530* Measurement start time (nonkey integer number 9999 in 1500)

1540* Sampling period duration (nonkey decimal number 9999.9 in 1500)

1550* Sampling flow rate (nonkey decimal number 9999.99 in 1500)

1560* Sampling train temperature (nonkey integer number 9(4) in 1500)

1570* Sampling train pressure (nonkey integer number 9(5) in 1500)

1580* Percent moisture (nonkey decimal number 99.9 in 1500)

1590* Dilution factor (nonkey decimal number 9(4).9 in 1500)

1600* Measurement size range - lower limit (decimal number 99.999 in 1500)

1610* Measurement size range - upper limit (decimal number 99.999 in 1500)

1620* Collection surface/substrate (nonkey text X (55) in 1500)

1630* Run remark-1 (nonkey text X (65) in 1500)

1631* Run remark-2 (nonkey text X (65) in 1500)

1632* Run remark-3 (nonkey text X (65) in 1500)

1640* Particle diameter basis (integer number 9 in 1500)

1645* Concentration basis (integer number in 1500)

1650* Upper diameter boundary (nonkey decimal number 9(3).9(3) in 1500)

1700* Particle size distribution date (RG in 1500)

1710* Diameter boundary (nonkey decimal number 9(2).9(3) in 1700)

1715* Calibration/calculation (nonkey integer number 9 in 1700)

1720* Concentration value - mantissa (nonkey decimal number 9.999 in 1700)

1730* Concentration value - exponent (nonkey integer number 99 in 1700)

1800* SAROAD table (RG)

    1810* SAROAD number (integer number 9(4) in 1800)

    1820* SAROAD chemical name (name X (27) in 1800)

1900* Chemical analysis type table (RG)

    1910* Chemical analysis code (name X in 1900)

    1920* Chemical analysis method (name X (75) in 1700)

SECTION 6.6

LIST OF KEY/NONKEY DATA ELEMENTS

CONTENTS

Number	Item	Page
6.6.1	Introduction.	UG-6.6.1-1
6.6.2	KEY Data Elements	UG-6.6.2-1
6.6.3	NONKEY Data Elements.	UG-6.6.3-1

6.6.1 Introduction

Data elements in a SYSTEM 2000 data base may be either KEY or NONKEY. This designation determines whether a particular data element may be accessed directly or must be qualified by including additional information. KEY elements may be selected directly; NONKEY elements require qualification by a KEY element. For example, the data element GENERIC DEVICE TYPE is KEY and may be used to directly access the data of interest, such as in the following:

```
PRINT TEST SERIES NUMBER WHERE GENERIC DEVICE TYPE EQ ESP:
```

If, however, the data element is NONKEY as in the case of SERIES START DATE, then qualification will be required:

```
IF SERIES START DATE GT 1/1/76 THEN PRINT TEST SERIES NUMBER WHERE
NAME OF TESTING GROUP EQ XYZ LABORATORY:
```

In this case, the KEY element, NAME OF TESTING GROUP, is used to qualify the request regarding a NONKEY element.

Sections 6.6.2 and 6.6.3 which follow list the KEY and NONKEY data elements, respectively, along with their SYSTEM 2000 component numbers.

6.6.2 KEY Data Elements

Component Number	Data Element
100	Source Category
120	Type of Operation
130	Feed Material Class
140	Operating Mode Class
150	Source Name
160	Site Name
170	Zone Location
180	UTM-X
190	UTM-Y
210	City
220	State
310	Test Series Number
320	Test Series Reference
330	Name of Testing Group
355	Date FPEIS Entry
410	Generic Device Type
420	Device Class
440	Device Commercial Name
450	Manufacturer
510	Device Number
520	Specification Number 2
610	Subseries Number
650	Sampling Location
660	Sampling Location Description
780	CO-2
781	CO
782	O-2
783	N-2
1010	Control Device Number
1020	Parameter Number 2
1110	Bioassay Test Type

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Component Number	Data Element
1200	Chemical Calibration/Calculation
1205	Diameter Basis
1410	SAROAD Chemical ID
1420	Analysis Method
1505	Run Number
1510	Measurement Instrument/Method Number
1520	Measurement Instrument/Method Name
1600	Measurement Size Range - Lower Limit
1610	Measurement Size Range - Upper Limit
1640	Particle Diameter Basis
1645	Concentration Basis

6.6.3 NONKEY Data Elements

Component Number	Data Element
200	Address
230	Zip Code
340	Series Start Date
350	Series Finish Date
360-369	Test Series Remark 1-10
430	Device Category
460-461	Device Description 1 and 2
530	Specification Type
540	Specification Value
620	Subseries Test Date
630	Subseries Start Time
640	Subseries Finish Time
670	Source Operating Mode
680	Source Operating Rate
690	Percent Design Capacity
700	Source Feed Material
710	Feed Material Composition
720	Volumetric Flow Rate
730	Gas Velocity Sampling Location
740	Gas Temperature Sampling Location
750	Pressure Sampling Location
760	Moisture Content
770	Percent Isokinetic Sampling
790	Trace Gases in PPM
800	Mass Train - Total Mass Concentration Mantissa
810	Mass Train - Total Mass Concentration Exponent
820	Mass Train - Front Half Mass Concentration Mantissa
830	Mass Train - Front Half Mass Concentration Exponent

Component Number	Data Element
840	Mass Train Comments
850	Density
860	Density Determination
870	Resistivity - Mantissa
880	Resistivity - Exponent
890	Resistivity Determination
900	Physical Properties Comments
910-924	Subseries Remark 1-15
1030	Parameter Type
1040	Parameter Value
1120	Bioassay Test Remarks
1210	Upper Boundary Limit
1220	Stage - 1 Limit
1230	Stage - 2 Limit
1240	Stage - 3 Limit
1250	Stage - 4 Limit
1260	Stage - 5 Limit
1270	Stage - 6 Limit
1280	Stage - 7 Limit
1290	Stage - 8 Limit
1300	Stage - 9 Limit
1430	Filter/Total
1432	Stage - 1
1434	Stage - 2
1436	Stage - 3
1438	Stage - 4
1440	Stage - 5
1442	Stage - 6
1444	Stage - 7
1446	Stage - 8

Component Number	Data Element
1448	Stage - 9
1530	Measurement Start Time
1540	Sampling Period Duration
1550	Sampling Flow Rate
1560	Sampling Train Temperature
1570	Sampling Train Pressure
1580	Percent Moisture
1620	Collection Surface/Substrate
1630-1632	Run Remark 1, 2, and 3
1650	Upper Diameter Boundary
1710	Diameter Boundary
1715	Calibration/Calculation
1720	Concentration Value - Mantissa
1730	Concentration Value - Exponent

6.7 Test Series Numbers and Refernces in the FPEIS

This section provides a master listing of test series numbers and references for the data in the FPEIS data base. As new testing results are added to the FPEIS, this master listing will be updated.

Test Series No.	Report's Author and Name	Testing Equipment	Source	Control Equipment	No. of Runs
1	Harris, D. B., and D. C. Drehmel, "Fractional Efficiency of Metal Fume Control as Determined by Brink Impactor," EPA/CSL (1973).	Brink Impactor Model B, 5-stage, Gelman type "A" final filter flow rate = 2.83 lpm Δp = 10"Hg	Zn Roaster	Wet ESP	4
2	Harris, D. B., and D. C. Drehmel, "Fractional Efficiency of Metal Fume Control as Determined by Brink Impactor," EPA/CSL (1973).	Brink Impactor Model B, 5-stage, Gelman type "A" final filter flow rate = 2.83 lpm Δp = 10"Hg	Cu Converter	Wet ESP	4
3	Harris, D. B., and D. C. Drehmel, "Fractional Efficiency of Metal Fume Control as Determined by Brink Impactor," EPA/CSL (1973).	Brink Impactor Model B, 5-stage, Gelman type "A" final filter flow rate = 2.83 lpm Δp = 10"Hg	Zn Sintering	Dry ESP	2
4	Harris, D. B., and D. C. Drehmel, "Fractional Efficiency of Metal Fume Control as Determined by Brink Impactor," EPA/CSL (1973).	Brink Impactor Model B, 5-stage, Gelman Type "A" final filter flow rate = 2.83 lpm Δp = 10"Hg	Pb Sintering	Baghouse (Orlon)	2
5	Harris, D. B., and D. C. Drehmel, "Fractional Efficiency of Metal Fume Control as Determined by Brink Impactor," EPA/CSL (1973).	Brink Impactor Model B, 5-stage, Gelman type "A" final filter flow rate = 2.83 lpm Δp = 10"Hg	Pb Blast Furnace	Baghouse (wool felt)	2
6	Statnick, R. M., "Measurement of SO_2, Particulate, and Trace Elements in a Copper Smelter Converter and Roaster/Reverberatory Gas Streams," EPA/CSL	Brink Impactor (Model B) at inlets, Andersen Sampler (Mark III) at outlets Brink flow rate = 2.83 lpm Andersen flow rate = 23.8 lpm	Cu Roaster and Reverberatory Furnace (ASARCO)	Dry ESP (pipe) and parallel type ESP	2

Test Series No.	Report's Author and Name	Testing Equipment	Source	Control Equipment	No. of Runs
7	Statnick, R. M., "Measurement of SO_2, Particulate, and Trace Elements in a Copper Smelter Converter and Roaster/Reverberatory Gas Streams," EPA/CSL	Brink Impactor (Model B) at inlets, Andersen Sampler (Mark III) at outlets Brink flow rate = 2.83 lpm Andersen flow rate = 23.8 lpm	Cu Converter	Plate type ESP	2
8	McCain, J. D., and W. B. Smith, "Lone Star Steel Steam-Hydro Air Cleaning System Evaluation," EPA-650/2-74-028 (1974).	Brink Impactor at inlet and Andersen Sampler at outlet. Optical particle counter and diffusion battery. Method 5 technique.	Open Hearth Furnace	Lone Star Steel Steam-Hydro Scrubber	38
9	Cooper, D. W., and D. P. Andersen, "Dynactor Scrubber Evaluation," GCA Corporation (1974)	Andersen (Mark III) 14 lpm	Test Aerosol from Dust Feeder	Dynactor Scrubber	50
10	Harris, D. B., "Tests Performed at Celotex Corporation, Goldsboro, North Carolina	Pilat Impactor	Asphalt Roofing	Afterburner	3
11	Harris, D. B., and J. A. Turner, "Particulate and SO_2/SO_3 Measurement Around an Anthracite Steam Generator Baghouse," EPA/CSL (1973)	Brink Impactor flow rate = 4.7 lpm Δp = 10"Hg	Pulverized Coal-Fired Boiler (anthracite) Pennsylvania Power and Light Company	Baghouse bulked weave, glass fiber bags with a Teflon finish	4
12	McKenna, J. D., "Applying Fabric Filtration to Coal-Fired Industrial Boilers: A Preliminary Pilot Scale Investigation," Enviro-Systems and Research, Inc. (1974)	Andersen Sampler	Coal-Fired Industrial Boiler Kerr Industries, Concord, North Carolina	Nomex Baghouse	3
13	Cowherd, C., et al., "Hazardous Emission Characterization of Utility Boilers," EPA-650/2-75-066	Brink Impactor	Utility Boiler	Cyclone	6

Test Series No.	Report's Author and Name	Testing Equipment	Source	Control Equipment	No. of Runs
15	Statnick, R. M., and D. C. Drehmel, "Fine Particulate Control Using SO_2 Scrubbers," EPA (1974).	Brink Impactor and Andersen Sampler. Total Particulates using EPA Method 5.	Coal-Fired Power Boiler (TVA, Shawnee)	TCA Scrubber	16
16	Statnick, R. M., and D. C. Drehmel, "Fine Particulate Control Using SO_2 Scrubbers," EPA (1974).	Brink Impactor and Andersen Sampler. Total Particulates using EPA Method 5.	Coal-Fired Power Boiler (TVA, Shawnee)	Venturi Scrubber	4
17	Statnick, R. M., and D. C. Drehmel, "Fine Particulate Control Using SO_2 Scrubbers," EPA (1974).	Brink Impactor and Andersen Sampler. Total Particulates using EPA Method 5.	No. 6 Fuel Oil Fired Power Boiler (Mystic)	Venturi MgO Scrubber	8
18	Riggenbach, J. D., E. D. Johnson and M. K. Hamlin, "Measurement of Particulate Grain Loadings, Particle Size Distribution, and Sulfur Gas Concentrations at Hoerner Waldorf's Pulp and Papermill No. 3 Recovery System, Vols. I, II, and III, Environmental Science and Engineering, Inc.	Brink Impactor	Pulp and Papermill Recovery Biler	ESP	38
19	Shannon, L. J., et al., "St. Louis/Union Electric Refuse Firing Demonstration Air Pollution Test Report."	Total Mass by EPA Method 5 Brink Impactor and Andersen Sampler	Coal-Fired Utility Boiler Refuse Firing Demonstration, St. Louis/Union Electric	ESP	26
20	McCain, J. D., "Evaluation of Aronetics Two-Phase Jet Scrubber," EPA-650/2-74-129	Brink Impactor, Andersen Sampler Method 5, Optical Particle Counter, Diffusion Battery + CNC	Ferro-Alloy Electric Arc Furnace	Aronetics Two-Phase Jet Scrubber	41
21	Bosch, J. C., M. J. Pilat, and B. F. Hrutfiord, "Size Distribution of Aerosols From a Kraft Mill Recovery Furnace," Tappi 56(11):1871 (1971).	Pilat Impactor	Kraft Mill Recovery Furnace	ESP	4

Test Series Nos. 14 and 47 has missing or invalid data and will be coded when test data are available.

Test Series No.	Report's Author and Name	Testing Equipment	Source	Control Equipment	No. of Runs
22	McCarry, F. J., and C. J. Gregory, "A Comparison of the Size Distribution of Particulates Emitted From Air, Mechanical, and Steam Atomized Oil-Fired Burners," JAPCA, 22(8):636 (1972).	Andersen Sampler	Air Atomized Oil-Fired Boiler	ESP	1
23	McCarry, F. J., and C. J. Gregory, "A Comparison of the Size Distribution of Particulates Emitted From Air, Mechanical, and Steam Atomized Oil-Fired Burners," JAPCA, 22(8):636 (1972).	Andersen Sampler	Mechanical Atomized Oil-Fired Boiler	ESP	1
24	McCarry, F. J., and C. J. Gregory, "A Comparison of the Size Distribution of Particulates Emitted From Air, Mechanical, and Steam Atomized Oil-Fired Burners," JAPCA, 22(8):636 (1972).	Andersen Sampler	Steam Atomized Oil-Fired Boiler	ESP	[illegible]
25	Lee, R. E., Jr., H. L. Crist, A. E. Riley, and K. E. MacLeod, "Concentration and Size of Trace Metal Emissions From a Power Plant, a Steel Plant, and a Cotton Gin," Env. Sci. and Tech., 9(7):643 (1975).	UW Mark III Sampler	Emissions from a Power Plant	ESP	2
26	Lee, R. E., Jr., H. L. Crist, A. E. Riley, and K. E. MacLeod, "Concentration and Size of Trace Metal Emissions From a Power Plant, a Steel Plant, and a Cotton Gin," Env. Sci. and Tech., 9(7):643 (1975).	UW Mark III Sampler	Emissions from a Steel Plant	Baghouse	2

Test Series No.	Report's Author and Name	Testing Equipment	Source	Control Equipment	No. of Runs
27	Lee, R. E., Jr., H. L. Crist, A. E. Riley, and K. E. MacLeod, "Concentration and Size of Trace Metal Emissions from a Power Plant, a Steel Plant, and a Cotton Gin," Env. Sci. and Tech., 9(7)643 (1975).	UW Mark III Sampler	Emissions from a Cotton Gin	Wet Scrubber	2
28	"St. Louis-Union Electric Refuse Fuel Project," MRI Project No. 3821-C(4), January 1975	Brink and Andersen Impactors	Coal-Fired Utility Boiler Refuse Firing Demonstration	ESP	67
29	"St. Louis-Union Electric Refuse Fuel Project," MRI Project No. 4033-C, Monthly Report No. 1	Brink and Andersen Impactors	Coal-Fired Utility Boiler Refuse Firing Demonstration	ESP	12
30	"Test and Evaluation Program for St. Louis-Union Electric Refuse Fuel Project," MRI Project No. 4033-C, Monthly Report No. 4	Brink and Andersen Impactors	Coal-Fired Utility Boiler Refuse Firing Demonstration	ESP	43
31	"Test and Evaluation Program for St. Louis-Union Electric Refuse Fuel Project," MRI Project No. 4033-C, Monthly Report No. 11	Brink and Andersen Impactors	Coal-Fired Utility Boiler Refuse Firing Demonstration	ESP	19
32	Toca, F. M., "Lead and Cadmium Distribution in the Particulate Effluent from a Coal-Fired Boiler," Ph.D. Thesis, University of Iowa, Ames, Iowa, July 1972	Andersen Ambient Sampler	Coal-Fired Boiler	ESP	5
33	Baladi, E., "Particle Size Distribution Tests for Beker Industries Corporation," MRI Project No. 5-1379-C	Brinks Impactor	Phosphate Rock Calciner	Venturi Scrubber	5

Test Series No.	Report's Author and Name	Testing Equipment	Source	Control Equipment	No. of Runs
34	Gooch, J. P., and J. D. McCain, "Particulate Collection Efficiency Measurements on a Wet Electrostatic Precipitator," EPA-650/2-75-033	Brink Andersen Samplers Optical Particle Counter, Diffusion Battery and CN Counter	Aluminum Reduction Cells	ESP Preceded by Spray Towers	17
35	Bradway, R. M., and R. W. Cass, "Fractional Efficiency of a Utility Boiler Baghouse," EPA-600/2-75-013-a	Andersen Impactor	Coal-Fired Boiler	Baghouse	86
36	McKenna, J. D., J. C. Mylock, and W. O. Lipscomb, "Applying Fabric Filtration to Coal-Fired Industrial Boilers," EPA-650/2-74-058-a	Andersen Impactor	Coal-Fired Boiler	Nomex Baghouse	28
37	McKenna, J. D., J. C. Mylock, and W. O. Lipscomb, "Applying Fabric Filtration to Coal-Fired Industrial Boilers," EPA-640/2-74-058-a	Andersen Impactor	Coal-Fired Boiler	Teflon Felt (Style 1) Baghouse	7
38	McKenna, J. D., J. C. Mylock, and W. O. Lipscomb, "Applying Fabric Filtration to Coal-Fired Industrial Boilers," EPA-650/2-74-058-a	Andersen Impactor	Coal-Fired Boiler	Teflon Felt (Style 2) Baghouse	5
39	McKenna, J. D., J. C. Mylock, and W. O. Lipscomb, "Applying Fabric Filtration to Coal-Fired Industrial Boilers," EPA-650/2-74-058-a	Andersen Impactor	Coal-Fired Boiler	Gore-Tex/Nomex Baghouse	11
40	McKenna, J. D., J. C. Mylock, and W. O. Lipscomb, "Applying Fabric Filtration to Coal-Fired Industrial Boilers," EPA-650/2-74-058-a	Andersen Impactor	Coal-Fired Boiler	Dralon Baghouse	7

Test Series No.	Report's Author and Name	Testing Equipment	Source	Control Equipment	No. of Runs
41	McCain, J. D., "Evaluation of Centrifield Scrubber," EPA-650/2-74-129-a	Brinks Andersen Impactors Diffusional, Optical and Electrical Methods	Asphalt Dryer Burning No. 2 Fuel Oil	1. Coarse Cyclone 2. Secondary Collector 3. Scrubber	31
42	Cooper, D. W., "Pentapure Impinger Evaluation," EPA-650/2-75-024-a	Andersen In-Stack Impactor	Gray Iron Foundry	Pentapure Impinger	12
43	Yost, K. J. et al., "The Environmental Flow of Cadmium and Other Trace Metals," Progress Report NSF (RANN) Grant GI-35106, Purdue University,West Lafayette, Indiana	Andersen Impactor	Zinc Coker Plant	-	1
44	Yost, K. J. et al., "The Environmental Flow of Cadmium and Other Trace Metals," Progress Report NSF (RANN) Grant GI-35106, Purdue University, West Lafayette, Indiana	Andersen Impactor	Zinc Vertical Retort	Baghouse	3
45	Yost, K. J. et al., "The Environmental Flow of Cadmium and Other Trace Metals," Progress Report NSF (RANN) Grant GI-35106, Purdue University, West Lafayette, Indiana	Andersen Impactor	Steel Mill Open Hearth Furnace	ESP	6
46	Yost, K. J. et al., "The Environmental Flow of Cadmium and Other Trace Metals," Progress Report NSF (RANN) Grant GI-35106, Purdue University, West Lafayette, Indiana	Andersen Impactor	Municipal Incinerator	Scrubber	1
48	Calvert, S., N. J. Jhaveri, and S. Yung, "Fine Particle Scrubber Performance Tests," EPA-650/2-74-093	UW Mark II and Andersen Impactors	Urea Prilling Tower	Valve Tray	12

Test Series No.	Report's Author and Name	Testing Equipment	Source	Control Equipment	No. of Runs
49	Calvert, S., M. J. Jhaveri, and S. Yung, "Fine Particle Scrubber Performance Tests," EPA-650/2-74-093	UW Mark III and Andersen Impactors	Potash Dryer	Scrubber	17
50	Calvert, S., M. J. Jhaveri, and S. Yung, "Fine Particle Scrubber Performance Tests," EPA-650/2-74-093	UW Mark III and Andersen Impactors	Coal-Fired Boiler	TCA Scrubber	6
51	Calvert, S., M. J. Jhaveri, and S. Yung, "Fine Particle Scrubber Performance Tests," EPA-650/2-74-093	UW Mark III and Andersen Impactors	Coal-Fired Boiler	Venturi Scrubber	6
52	Calvert, S., M. J. Jhaveri, and S. Yung, "Fine Particle Scrubber Performance Tests," EPA-650/2-74-093	UW Mark III and Andersen Impactors	Salt Dryer	Wetted Fiber Scrubber	16
53	Calvert, S., M. J. Jhaveri, and S. Yung, "Fine Particle Scrubber Performance Tests," EPA-650/2-74-093	UW Mark III and Andersen Impactors	Salt Dryer	Impingment Plate Scrubber	12
54	Calvert, S., M. J. Jhaveri, and S. Yung, "Fine Particle Scrubber Performance Tests," EPA-650/2-74-093	UW Mark III and Andersen Impactors	Iron Melting Cupola	Venturi Rod Scrubber	18